

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
filed in the U.S. District Court _____ for the District of Delaware _____ on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

DOCKET NO.	DATE FILED 12/1/2021	U.S. DISTRICT COURT for the District of Delaware
PLAINTIFF Valyant AI, Inc.		DEFENDANT Hi Auto, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 US 10,592,706 B2	3/17/2020	Valyant AI, Inc.
2		
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
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5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
-------	-------------------	------

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
 filed in the U.S. District Court _____ for the District of Delaware _____ on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED 12/1/2021	U.S. DISTRICT COURT for the District of Delaware
PLAINTIFF Valyant AI, Inc.		DEFENDANT Kea Cloud, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 US 10,592,706 B2	3/17/2020	Valyant AI, Inc.
2		
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/274,170	03/17/2020	10592706	1397-4-NP	4761

120775 7590 02/26/2020

Rocky Mountain Patent LLC
c/o Hall Estill
1600 Stout Street, Suite 500
Denver, CO 80202

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Robley Carpenter II, Denver, CO;
Valyant AI, Inc., Denver, CO;
Jacob Poore, Loveland, CO;
Benjamin Thielker, Denver, CO;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Robley Carpenter II, Jacob Poore and Benjamin Thielker

Application No.: 16/274,170

Filed: 02/12/2019

For: ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM

CERTIFICATE OF EFS SUBMISSION (CEFS)(37 C.F.R. § 1.8(a)(i)(1)(C))

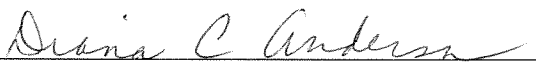
I hereby certify that on February 18, 2020 the following correspondence:

Name of Paper: Notification of filing of continuing application

Number of Pages: 2

Fees: None

is being submitted to the Patent and Trademark Office via the Office Electronic Filing System in accordance with § 1.6(a)(4) at _____ local time.



Signature

Telephone Number: 405-553-2828

Diana C. Anderson

Type or print name of person certifying

Filed Electronically on February 18, 2020

PATENT
Dkt. 1397-4-NP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Robley Carpenter II, Jacob Poore and Benjamin Thielker**
Assignee: **VALYANT AI, INC.**
Application No.: **16/274,170** Group No.: **2657**
Filed: **February 12, 2019** Examiner: **Jakieda R. Jackson**
For: **ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM**

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**NOTIFICATION OF FILING OF CONTINUING,
DIVISIONAL OR CONTINUED PROSECUTION APPLICATION**

Notification is hereby being made of the filing of a continuation application for this case concurrently herewith.

Respectfully submitted,

Date: February 18, 2020

/Tyler J. Mantooth/
Tyler J. Mantooth, Registration No. 60,162
Hall Estill Attorneys at Law
100 North Broadway, Suite 2900
Oklahoma City, OK 73102
Telephone: 405-553-2828
Customer No. 33900

Electronic Acknowledgement Receipt

EFS ID:	38614134
Application Number:	16274170
International Application Number:	
Confirmation Number:	4761
Title of Invention:	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM
First Named Inventor/Applicant Name:	Robley Carpenter
Customer Number:	120775
Filer:	Tyler Joseph Mantooth/Diana Anderson
Filer Authorized By:	Tyler Joseph Mantooth
Attorney Docket Number:	1397-4-NP
Receipt Date:	18-FEB-2020
Filing Date:	12-FEB-2019
Time Stamp:	14:24:22
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	2020-02-18- NoticeOfContAppln.pdf	77638	no	2
			a6dd9ad7a1f0514846db118f4d313f0380b a0707		

Warnings:

KEA EX1004

Page 6 of 292

Information:	
Total Files Size (in bytes):	77638
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.	

Electronic Patent Application Fee Transmittal

Application Number:	16274170			
Filing Date:	12-Feb-2019			
Title of Invention:	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM			
First Named Inventor/Applicant Name:	Robley Carpenter			
Filer:	Tyler Joseph Mantooth/Diana Anderson			
Attorney Docket Number:	1397-4-NP			
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	500	500

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				500

Electronic Acknowledgement Receipt

EFS ID:	38415177
Application Number:	16274170
International Application Number:	
Confirmation Number:	4761
Title of Invention:	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM
First Named Inventor/Applicant Name:	Robley Carpenter
Customer Number:	120775
Filer:	Tyler Joseph Mantooth/Diana Anderson
Filer Authorized By:	Tyler Joseph Mantooth
Attorney Docket Number:	1397-4-NP
Receipt Date:	28-JAN-2020
Filing Date:	12-FEB-2019
Time Stamp:	10:23:38
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 500
RAM confirmation Number	E20201RA23587955
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	2020-01-28-IssueFeeTrans.pdf	236152	no	3
			d687409e3bd71bae59f99f5b1a469385e0458bad		
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30049	no	2
			4ba9c5a5a6e1bb4fbb5c622a92ce5b58053cde01		
Warnings:					
Information:					
Total Files Size (in bytes):			266201		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Robley Carpenter II, Jacob Poore & Benjamin Thielker

Application No.: 16/274,170

Filed: 02/12/2019

For: ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM

CERTIFICATE OF EFS SUBMISSION (CEFS)(37 C.F.R. § 1.8(a)(i)(1)(C))

I hereby certify that on January 28, 2020 the following correspondence:

Name of Paper: Issue fee transmittal

Number of Pages: 3

Fees: Issue

Amount: \$ 500.00

Payment By: Credit Card

is being submitted to the Patent and Trademark Office via the Office Electronic Filing System in accordance with § 1.6(a)(4) at _____ local time.



Signature

Telephone Number: 405-553-2828

Diana C. Anderson
Type or print name of person certifying

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **Robley Carpenter II, Jacob Poore & Benjamin Thielker**
Assignee: **VALYANT AI, INC.**
Filed: **February 12, 2019** Group No.: **2657**
Application No. **16/274,170** Examiner: **Jakieda R. Jackson**
For: **ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM**

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF PAYMENT OF ISSUE FEE (37 C.F.R. § 1.311)

1. Applicant hereby pays the issue fee for the attached Issue Fee Transmittal PTOL-85.
2. Applicant
 - A. Asserted small entity status in this application on February 12, 2019 by submission of a written assertion of small entity status (37 C.F.R. § 1.27(c)(1))
It is confirmed that small entity status for this application has been checked and it is still in effect and is being asserted.
3. Fee (Issue): Application status is small business entity with a utility fee of \$500.00.
4. Total Fees Due: issue fee \$500.00
5. Assignee's Name and Address to be printed on patent is as follows (37 C.F.R. § 3.81):

Name of Assignee:	Valyant AI, Inc.
Address:	Denver, Colorado
Residence (City and State or Country):	US
Assignee category (not printed on patent):	Corporation or other private group entity
6. Payment of total fee due:

Authorization is hereby made to charge the amount of \$500.00 to Credit card as shown on the attached electronic credit card information authorization. Credit overpayment in same manner
Charge any additional fees required by this paper to Deposit Account 506295.

Date: January 28, 2020

/Tyler J. Mantooth/
Jeffrey R. Schell, Registration No. 71,546
Tyler J. Mantooth, Registration No. 60,162
Rocky Mountain Patent LLC
1800 Wazee St., Suite 300
Denver, CO 80202
Telephone: 405-553-2828
Customer No. 120775

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

120775 7590 01/27/2020
Rocky Mountain Patent LLC
c/o Hall Estill
1600 Stout Street, Suite 500
Denver, CO 80202

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

Diana C. Anderson	(Typed or printed name)
	(Signature)
January 28, 2020	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/274,170	02/12/2019	Robley Carpenter II	1397-4-NP	4761

TITLE OF INVENTION: ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	04/27/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
JACKSON, JAKIEDA R	2657	704-270000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

- 1 Rocky Mountain Patent, LLC
- 2 Hall Estill Attorneys at Law
- 3 Tyler J. Mantooth

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

Valyant AI, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Denver, Colorado

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

- ☒ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 506295

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Tyler J. Mantooth/

Date January 28, 2020

Typed or printed name Tyler J. Mantooth

Registration No. 60,162



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

120775 7590 01/27/2020
Rocky Mountain Patent LLC
c/o Hall Estill
1600 Stout Street, Suite 500
Denver, CO 80202

EXAMINER	
JACKSON, JAKIEDA R	
ART UNIT	PAPER NUMBER
2657	

DATE MAILED: 01/27/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/274,170	02/12/2019	Robley Carpenter II	1397-4-NP	4761

TITLE OF INVENTION: ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	04/27/2020

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

120775 7590 01/27/2020
Rocky Mountain Patent LLC
c/o Hall Estill
1600 Stout Street, Suite 500
Denver, CO 80202

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/274,170	02/12/2019	Robley Carpenter II	1397-4-NP	4761

TITLE OF INVENTION: ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM

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nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	04/27/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
JACKSON, JAKIEDA R	2657	704-270000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

1 _____

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/274,170	02/12/2019	Robley Carpenter II	1397-4-NP	4761
120775	7590	01/27/2020	EXAMINER	
Rocky Mountain Patent LLC c/o Hall Estill 1600 Stout Street, Suite 500 Denver, CO 80202			JACKSON, JAKIEDA R	
			ART UNIT	PAPER NUMBER
			2657	

DATE MAILED: 01/27/2020

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, local, or tribal law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 16/274,170	Applicant(s) Carpenter et al.	
	Examiner JAKIEDA R JACKSON	Art Unit 2657	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/13/2020.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 11-17 and 19-22. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some *c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)	5. ☐ Examiner's Amendment/Comment
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.	6. ☐ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.	7. ☐ Other _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.	

/JAKIEDA R JACKSON/
Primary Examiner, Art Unit 2657

Issue Classification 	Application/Control No. 16/274,170	Applicant(s)/Patent Under Reexamination Carpenter et al.
	Examiner JAKIEDA R JACKSON	Art Unit 2657

CPC						
Symbol					Type	Version
G06F	/	40	/	279	F	2020-01-01
G10L	/	15	/	1815	I	2013-01-01
G10L	/	13	/	02	I	2013-01-01
G06F	/	16	/	3329	I	2019-01-01
G10L	/	15	/	26	I	2013-01-01
G10L	/	13	/	00	I	2013-01-01
G06Q	/	30	/	06	I	2013-01-01
G06F	/	40	/	30	I	2020-01-01

CPC Combination Sets				
Symbol	Type	Set	Ranking	Version
/				

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 11	
/JAKIEDA R JACKSON/ Primary Examiner, Art Unit 2657 (Primary Examiner) _____ (Date) 16 January 2020		O.G. Print Claim(s) 11	O.G. Print Figure 4

<i>Issue Classification</i> 	Application/Control No. 16/274,170	Applicant(s)/Patent Under Reexamination Carpenter et al.
	Examiner JAKIEDA R JACKSON	Art Unit 2657

INTERNATIONAL CLASSIFICATION			
CLAIMED			
G06F	/	40	/ 279
NON-CLAIMED			
	/		/

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	11	
/JAKIEDA R JACKSON/ Primary Examiner, Art Unit 2657	16 January 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	11	4

Issue Classification 	Application/Control No. 16/274,170	Applicant(s)/Patent Under Reexamination Carpenter et al.
	Examiner JAKIEDA R JACKSON	Art Unit 2657

☐ Claims renumbered in the same order as presented by applicant
 ☐ CPA
 ☐ T.D.
 ☐ R.1.47

CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		10	8	19										
	2	1	11	9	20										
	3	2	12	10	21										
	4	5	13	11	22										
	5	6	14												
	6	3	15												
	7	7	16												
	8	4	17												
	9		18												

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 11	
/JAKIEDA R JACKSON/ Primary Examiner, Art Unit 2657 (Primary Examiner) _____ (Date) 16 January 2020		O.G. Print Claim(s) 11	O.G. Print Figure 4

<i>Search Notes</i> 	Application/Control No. 16/274,170	Applicant(s)/Patent Under Reexamination Carpenter et al.
	Examiner JAKIEDA R JACKSON	Art Unit 2657

CPC - Searched*		
Symbol	Date	Examiner
G06F 3/167, 16/3329, 17/2785	07/21/2019	JJ
G10L 15/26	07/21/2019	JJ
G06Q 20/20, 30/60	07/21/2019	JJ

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
704	270,275	07/21/2019	JJ
705	15, 16	07/21/2019	JJ

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
EAST Search History	07/21/2019	JJ
Reviewed for 101	07/21/2019	JJ
Reviewed for DP	07/21/2019	JJ
Inventor Search	07/21/2019	JJ
EAST Search History Update	01/04/2020	JJ
EAST Search History Update	01/16/2020	JJ

/JAKIEDA R JACKSON/ Primary Examiner, Art Unit 2657	
--	--

<i>Search Notes</i> 	Application/Control No. 16/274,170	Applicant(s)/Patent Under Reexamination Carpenter et al.
	Examiner JAKIEDA R JACKSON	Art Unit 2657

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
G06F	3/167, 16/3329, 17/2785	01/16/2020	JJ
G10L	15/26	01/16/2020	JJ
G06Q	20/20, 30/60	01/16/2020	JJ

/JAKIEDA R JACKSON/ Primary Examiner, Art Unit 2657	
--	--

Filed Electronically on January 13, 2020

PATENT
Dkt. 1397-4-NP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **Robley Carpenter II, Jacob Poore & Benjamin Thielker**
Assignee: **VALYANT AI, INC.**
Filed: **February 12, 2019** Group No.: **2657**
Application No. **16/274,170** Examiner: **Jakieda R. Jackson**
For: **ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM**

Mail Stop AF
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO THE FINAL OFFICE ACTION
MAILED JANUARY 8, 2020

Sir:

Please enter the following amendments in the above referenced U.S. patent application.

Amendments to the Claims are reflected in the listing of claims beginning on page 2.

Remarks begin on page 7.

Filed Electronically on January 13, 2020

PATENT
Dkt. 1397-4-NP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **Robley Carpenter II, Jacob Poore & Benjamin Thielker**
Assignee: **VALYANT AI, INC.**
Filed: **February 12, 2019** Group No.: **2657**
Application No. **16/274,170** Examiner: **Jakieda R. Jackson**
For: **ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM**

Mail Stop AF
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO THE FINAL OFFICE ACTION
MAILED JANUARY 8, 2020

Sir:

Please enter the following amendments in the above referenced U.S. patent application.

Amendments to the Claims are reflected in the listing of claims beginning on page 2.

Remarks begin on page 7.

Electronic Acknowledgement Receipt

EFS ID:	38280555
Application Number:	16274170
International Application Number:	
Confirmation Number:	4761
Title of Invention:	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM
First Named Inventor/Applicant Name:	Robley Carpenter
Customer Number:	120775
Filer:	Tyler Joseph Mantooth/Diana Anderson
Filer Authorized By:	Tyler Joseph Mantooth
Attorney Docket Number:	1397-4-NP
Receipt Date:	13-JAN-2020
Filing Date:	12-FEB-2019
Time Stamp:	16:18:22
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	2020-01-13-AmendAFTrans.pdf	102820	no	3
			841743a969f1feb1837e3f02a798aaeb8e27743		

Warnings:

Information:					
2		2020-01-13- AmendAfterFinalRej.pdf	278919	yes	8
			51121bbec9a61e98b574eb642d3ce31843 7749e6		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Applicant Arguments/Remarks Made in an Amendment		7	8	
	Claims		2	6	
	Response After Final Action		1	1	
Warnings:					
Information:					
Total Files Size (in bytes):			381739		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. New Applications Under 35 U.S.C. 111 If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. National Stage of an International Application under 35 U.S.C. 371 If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. New International Application Filed with the USPTO as a Receiving Office If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Robley Carpenter II, Jacob Poore & Benjamin Thielker

Application No.: 16/274,170

Filed: 02/12/2019

For: ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM

CERTIFICATE OF EFS SUBMISSION (CEFS)(37 C.F.R. § 1.8(a)(i)(1)(C))

I hereby certify that on January 13, 2020 the following correspondence:

Name of Paper: Amendment AF and Transmittal

Number of Pages: 11

Fees: None

is being submitted to the Patent and Trademark Office via the Office Electronic Filing System in accordance with § 1.6(a)(4) at _____ local time.


Signature

Telephone Number: 405-553-2828

Diana C. Anderson
Type or print name of person certifying

Filed Electronically on January 13, 2020

PATENT
Dkt. 1397-4-NP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **Robley Carpenter II, Jacob Poore & Benjamin Thielker**
Assignee: **VALYANT AI, INC.**
Filed: **February 12, 2019** Group No.: **2657**
Application No. **16/274,170** Examiner: **Jakieda R. Jackson**
For: **ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM**

***RESPONSE UNDER
37 C.F.R. § 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP***

**Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**

AMENDMENT OR RESPONSE AFTER FINAL REJECTION--TRANSMITTAL

1. Transmitted herewith is an amendment after final rejection (37 C.F.R. 1.116) for this application.

STATUS

2. Applicant is a small entity A statement was already filed.

EXTENSION OF TERM

3. The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136 apply. Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

FEE FOR CLAIMS

4. The fee for claims (37 C.F.R. 1.16(b)-(d)) has been calculated as shown below:

	(Col.1)		(Col. 2)	(Col. 3)			SMALL ENTITY		
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NO PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE		ADDIT. FEE	
TOTAL	11	MINUS	21	= 0	x	\$ 40.00	=	\$ 0.00	
INDEP	2	MINUS	3	= 0	x	\$ 210.00	=	\$ 0	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					+	\$ 0.00	=	\$ 0.00	
TOTAL								\$	0.00
ADDIT. FEE									

No additional fee for claims is required.

DEFICIENCY

5. If any additional extension and/or fee is required, charge Account No. 506295.

If any additional fee for claims is required, charge Account No. 506295.

Respectfully submitted,

Date: January 13, 2020

/Tyler J. Mantooth/
 Tyler J. Mantooth, Registration No. 60,162
 Hall Estill Attorneys at Law
 100 North Broadway, Suite 2900
 Oklahoma City, OK 73102
 Telephone: 405-553-2828
 Fax: 405-553-2855
 Customer No. 33900

Remarks

Claims 1-10 were rejected in the final Office Action mailed January 8, 2020.

Claims 1-10 have been cancelled above without prejudice.

Indication of Allowable Subject Matter

The Applicant agrees with and gratefully acknowledges the allowance of claims 10-17 and 19-22. See Office Action mailed 01/08/19, pg. 8-9. For the reasons set forth below, all pending claims are patentable over the art of record.

Rejection of Claims Under 35 U.S.C. §103

Claims 1-10 have been rejected for allegedly being unpatentable over Negreiro (US 7,110,963) in view of Berg (US 2017//0109843), Breilig (US 9,646,286), Sankaranarayanan (US 8,879,242), Tsao (US 9,239,987), Erbey (US 2012/0317038), Kim (US 2018/ 0277107), and Szabo (US 7,184,438. These rejections are respectfully traversed.

Claims 1-10 have been cancelled above. Review of the art of record by the ordinary artisan would fail to find the subject matter of claims 11-17 and 19-22 taught or suggested, as supported by the Examiner's allowance of claims 11-17 and 19-22 in view of Negreiro, Berg, Breilig, Sankaranarayanan, Tsao, Erbey, Kim, and Szabo individually and collectively. See Office Action mailed 1/8/20, pg. 8-9. Accordingly, passage of all current claims to issuance is respectfully requested.

Conclusion

This Response is intended to be a complete response to the final Office Action mailed January 8, 2020. The Applicant respectfully requests reconsideration and

allowance of all of the claims pending in the application. For the record, silence on the part of the Applicant with regard to any statements made by the Examiner in the present rejection will not be taken as acquiescence to such statements.

Should any questions arise concerning this application, the Examiner is invited to contact the below signed attorney.

Respectfully submitted,

By: /Tyler J. Mantooth/

Tyler J. Mantooth, Registration No. 60,162
Hall Estill Attorneys at Law
100 North Broadway, Suite 2900
Oklahoma City, OK 73102
Telephone: (405) 553-2828
Fax: (405) 553-2855
Customer No. 33900

Amendments to the Claims:

This listing of claims replaces all previous versions and listings of claims in the application.

Listing of Claims

Claims 1-10 (Cancelled).

11. (Previously presented) A method comprising the steps of:

providing an audio stream of an order of a customer positioned on a site;

providing an order processor having a speech recognition module trained using

artificial intelligence programs;

converting a word or words in the audio stream to text using the speech

recognition module;

processing the text communication with the speech recognition module to identify

a word or words in the text of the converted audio stream according to a

previous spoken word training;

providing a natural language processor having order assembly capabilities and

exception detection capabilities, wherein the natural language processor

receives recognized text from the order processor and creates or modifies

an order based upon the recognized text;

generating an order with the natural language processor;

alerting an auditor of detected exceptions in the order, the auditor located off-site

and connected to the order processor via a data connection;

deactivating the order processor with the auditor in response to the detected

exceptions in the order; and

prompting an on-site employee to engage the customer and complete the order.

12. (Original) The method according to claim 11 wherein the order is processed in real time.

13. (Previously presented) The method according to claim 17 wherein a business processor receives order information from the natural language processor (NLP) and performs the steps of:

associating the order items with one or more additional menu items or options

associated with the order items; and

querying the customer about the one or more additional menu items or options

associated with the order items, wherein the NLP updates the order based

upon the customer response to the query.

14. (Original) The method according to claim 13 further comprising the steps of:

providing a text-to-speech processor to convert queries from the business

processor into audio to be communicated to a customer; and

processing the text with the text-to-speech processor to create an audio

communication of the query generated by the business processor.

15. (Previously presented) The method according to claim 11 wherein the alert to the auditor prompts the auditor to switch the order processor from an autonomous mode to an auditor-assist mode prior to deactivating the order processor.

16. (Previously presented) The method according to claim 17 further comprising the steps of reviewing an order by the auditor by comparing the order generated by the natural language processor to the communication in the audio stream and updating the order based upon auditor review.

17. (Previously presented) A method comprising the steps of:

- providing an audio stream of an order of a customer to a speech-to text processor,
 - the customer positioned on a site;
- providing an order processor incorporating a speech recognition module trained
 - using artificial intelligence programs;
- converting a word or words in the audio stream to text using the speech
 - recognition module;
- processing the text communication with the speech recognition module to identify
 - a word or words in the text of the converted audio stream according to a
 - previous spoken word training;
- providing a natural language processor having order assembly capabilities and
 - exception detection capabilities, wherein the natural language processor
 - receives recognized text from the order processor and creates or modifies
 - the order based upon the recognized text;
- generating an order with the natural language processor;
- providing an audio stream of a customer order to an auditor, the auditor located
 - off-site and connected to the order processor via a data connection;
- providing the generated order to the auditor;

performing a comparison of the audio stream of a customer order with the
generated order by the auditor;
switching to an auditor-assist mode in response to the comparison of the audio
stream with the generated order;
updating the order processor based upon errors detected in the order by the
auditor;
deactivating the order processor with the auditor; and
transmitting the generated order to an on-site employee to communicate with the
customer, to collect payment from the customer, and to provide
notifications to release the ordered product or service to the customer.

Claims 18 (Cancelled).

19. (Original) The method according to claim 17 further comprising the steps of:
providing a text-to-speech processor to convert queries from the business
processor into audio to be communicated to a customer; and
processing the text with the text-to-speech processor to create an audio
communication of the query generated by the business processor.

20. (Previously presented) The method according to claim 17 further comprising
the step of alerting the auditor by the natural language processor (NLP) of any exceptions
detected by the artificially intelligent order processing system, wherein the auditor can

override the artificially intelligent order processing system based upon the detected exception.

21. (Previously presented) The method according to claim 17 wherein the auditor deactivates the order processor in response to a detected change in customer traffic.

22. (Previously presented) The method according to claim 17 wherein the auditor deactivates the order processor in response to a detected change in staffing at the site.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 16/274,170		Filing Date 02/12/2019		☐ To be Mailed		
ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO										
APPLICATION AS FILED - PART I										
		(Column 1)	(Column 2)							
FOR		NUMBER FILED	NUMBER EXTRA	RATE (\$)		FEE (\$)				
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A	N/A						
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))		N/A	N/A	N/A						
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A	N/A	N/A						
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 =	*	x \$50 =						
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =	*	x \$230 =						
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).								
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL						
APPLICATION AS AMENDED - PART II										
		(Column 1)	(Column 2)	(Column 3)						
AMENDMENT	01/13/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	* 11	Minus	** 20	= 0	x \$50 =		0		
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0	x \$230 =		0		
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE		0		
		(Column 1)	(Column 2)	(Column 3)						
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	*	Minus	**	=	x \$0 =				
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x \$0 =				
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE				
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.						SLIE				
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".						/JULIET MCMILLAN/				
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".										
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/274,170	02/12/2019	Robley Carpenter II	1397-4-NP	4761
120775	7590	01/08/2020	EXAMINER	
Rocky Mountain Patent LLC c/o Hall Estill 1600 Stout Street, Suite 500 Denver, CO 80202			JACKSON, JAKIEDA R	
			ART UNIT	PAPER NUMBER
			2657	
			NOTIFICATION DATE	DELIVERY MODE
			01/08/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@dockettrak.com
cbursey@hallestill.com
okcipdocketing@hallestill.com

Office Action Summary

Application No.

16/274,170

Applicant(s)

Carpenter et al.

Examiner

JAKIEDA R JACKSON

Art Unit

2657

AIA (FITF) Status

Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/25/19.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

- 5) ☒ Claim(s) 1-17 and 19-22 is/are pending in the application.
5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☒ Claim(s) 11-17 and 19-22 is/are allowed.
- 7) ☒ Claim(s) 1-10 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some** c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date ____.
- 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 4) ☐ Other: ____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Response to Amendment

In response to the Office Action mailed November 21, 2008, applicant submitted an amendment filed on February 23, 2008, in which the applicant traversed and requested reconsideration.

Response to Arguments

Applicants argue that the prior art cited fails to teach the claims as amended. With regards to claims 1-10, the arguments are persuasive, but are moot in view of new grounds of rejection. With regards to remaining claims, the rejection has been withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim(s) 1 and 9 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro (USPN 7,110,963) in view of Berg et al. (PGPUB 2017/0109843), hereinafter referenced as Berg.

Regarding **claim 1**, Negreiro discloses a method of comprising the steps of:

- providing an audio stream of customer ordering transactions (figure 11, element 507 with dialog to place order; column 3, line 39 – column 4, line 65 with column 6, lines 1-41);
- slicing the audio stream into short clips (parsing stream; column 5, lines 25-50);
- transcribing the short clips into text using a transcription unit (figure 5, element 227 and column 3, line 39 – column 4, line 65);
- adding metadata tags to the transcribed text using the transcription unit (codes; column 3, line 39 – column 4, line 65);
- training a speech-to-text system by populating the artificially intelligent order processing system with the transcribed text having the metadata tags (training data; column 3, line 39 – column 4, line 65), but does not specifically teach recognizing an identity of a customer with a business processor, correlating the identity of the customer with at least one past order with the business processor and querying the customer with an order addition based on the at least one past order as directed by the business processor.

Berg discloses a method comprising:

- recognizing an identity of a customer with a business processor (paragraphs 0009, 0148-0149);

correlating the identity of the customer with at least one past order with the business processor (paragraph 0097); and

querying the customer with an order addition based on the at least one past order as directed by the business processor (paragraph 0097), to customize a user's experience.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to allow a convenient and easy ordering processing method.

Regarding **claim 9**, Negreiro discloses a method wherein the audio stream used for text transcription is a stream from a customer accessible microphone to a base station (figure 3 with column 3, lines 4-38 and column 6, lines 1-41).

Claim 2 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Berg and in further view of Breilig et al (9,646,286), hereinafter referenced as Breilig.

Regarding **claim 2**, Negreiro and Berg disclose a method as described above, but does not specifically teach wherein the transcription unit is a crowd source platform.

Breilig discloses a method wherein the transcription unit is a crowd source platform (column 7, lines 9-35), to identify product profile.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to provide new and useful data to automating ordering processing.

Claim 3 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Berg and in further view of Sankaranarayanan (USPN 8,879,242).

Regarding **claim 3**, Negreiro and Berg disclose a method as described above, but does not specifically teach wherein the metadata tags provide data regarding tone or inflection that would be lost in a traditional speech-to-text conversion.

Sankaranarayanan discloses a method wherein the metadata tags provide data regarding tone or inflection that would be lost in a traditional speech-to-text conversion (column 4, lines 19-50), to allow synthesis.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to mark the customer interaction for classification and analysis.

Claim 3 is *alternately* rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Berg and in further view of Erbey et al. (PGPUB 2012/0317038), hereinafter referenced as Erbey.

Regarding **claim 3**, Negreiro in view of Berg disclose a method as described above, but does not specifically teach wherein the metadata tags provide data regarding tone or inflection that would be lost in a traditional speech-to-text conversion.

Erbey discloses a method wherein the metadata tags provide data regarding tone or inflection that would be lost in a traditional speech-to-text conversion (paragraph 0011), to receive desired outcome based on real-time changes.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to output data that reflects changes and sounds natural.

Claim 4 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Berg and in further view of Tsao (USPN 9,239,987).

Regarding **claim 4**, Negreiro in view of Berg disclose a method as described above, but does not specifically teach a method wherein the speech-to-text system employs a deep neural network.

Tsao discloses a method wherein the speech-to-text system employs a deep neural network (column 7, lines 53-67), to help estimate likelihoods.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to assist with predictive modeling.

Claim 5 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Berg and in further view of Szabo (USPN 7,184,438).

Regarding **claim 5**, Negreiro of Berg disclose a method further comprising the steps of:

identifying a word or phrase in the text (keywords; figures 5 and 7) using the speech-to-text processor (speech to text; column 3, lines 51 – column 4, line 65), but

does not specifically teach providing meaning for the identified word or phrase using a natural language processor.

Szabo discloses a method providing meaning for the identified word or phrase using a natural language processor (column 72, line 63 – column 73, line 57), to provide an intelligent system for providing definitions.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, for clarity.

Regarding **claim 6**, Negreiro discloses a method further comprising the step of generating an order with a business processor using the identified word or phrase from the natural language processor (naturally ordering; column 3, line 39 – column 4, line 65).

Claims 7 and 8 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view Berg and Szabo and in further view of Sankaranarayanan,

Regarding **claim 7**, it is interpreted and rejected for similar reasons as set forth in the combination of claims 3 and 5. In addition, Sankaranarayanan discloses a method wherein the natural language processor is configured to trigger an alert when a warning condition is encountered (column 4, lines 19-50).

Regarding **claim 8**, it is interpreted and rejected for similar reasons as set forth in the combination of claims 3 and 5. In addition, Sankaranarayanan discloses a method wherein the warning condition is a word or phrase indicative of customer dissatisfaction or confusion (column 4, lines 19-50).

Claim 10 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Berg and in further view of Kim (PGPUB 2018/0277107).

Regarding **claim 10**, Negreiro in view of Berg disclose a method as described above, but does not specifically teach a method further comprising the step of decreasing the strength of the audio stream prior to transmission to the transcription unit.

Kim discloses a method further comprising the step of decreasing the strength of the audio stream prior to transmission to the transcription unit (paragraph 0060), to enhance speech recognition.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to modify audio transition.

Allowable Subject Matter

Claims 11-17 and 19-22 are allowed.

The following is a statement of reasons for allowance:

As for independent claims 11 and 17, they recite a method for artificially intelligent order processing. Prior art of record discloses a similar method, but fails to teach the claims in combination with switching the order processor from an autonomous mode to an auditor-assist mode in response to the comparison of the audio stream with the generated order alerting an auditor of detected exceptions in the order, wherein the auditor is located off-site and connected to the order processor via a data connection, deactivating the order processor with the auditor in response to the

Art Unit: 2657

detected exceptions in the order and prompting an on-site employee to engage the customer and complete the order.

Dependent claims 12-16 and 19-22 are allowed because they further limit their parent claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. This information has been detailed in the PTO 892 attached (Notice of References Cited).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAKIEDA R JACKSON whose telephone number is (571)272-7619. The examiner can normally be reached on Mon - Fri 6:30a-2:30p.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Washburn can be reached on 571.272.5551. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JAKIEDA R JACKSON/
Primary Examiner, Art Unit 2657

<i>Notice of References Cited</i>	Application/Control No. 16/274,170		Applicant(s)/Patent Under Reexamination Carpenter et al.	
	Examiner JAKIEDA R JACKSON		Art Unit 2657	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20120191522-A1	07-2012	McLaughlin; Quinn	G06Q50/01	705/14.23
*	B	US-9355155-B1	05-2016	Cassel; Kristoffer	G06F16/93	1/1
*	C	US-20170109843-A1	04-2017	Berg; Jeffrey Ryan	G06Q50/12	1/1
*	D	US-20130317921-A1	11-2013	Havas; Peter	G06Q30/0633	705/15
*	E	US-20120323638-A1	12-2012	Knipfer; Ivory Wellman	G06Q10/083	705/7.37
*	F	US-20070265935-A1	11-2007	Woycik; Thomas E.	G06Q20/367	705/65
*	G	US-20090182627-A1	07-2009	Otto; Jonathan	G06N5/025	706/45
*	H	US-20030033222-A1	02-2003	Fuwa, Tetsuji	G06Q10/087	705/26.2
*	I	US-6415555-B1	07-2002	Montague; Wayne	G06Q30/06	235/375
*	J	US-20160189281-A1	06-2016	Kurnit; Scott Philip	G06Q30/0635	705/26.35
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

<i>Search Notes</i> 	Application/Control No. 16/274,170	Applicant(s)/Patent Under Reexamination Carpenter et al.
	Examiner JAKIEDA R JACKSON	Art Unit 2657

CPC - Searched*		
Symbol	Date	Examiner
G06F 3/167, 16/3329, 17/2785	07/21/2019	JJ
G10L 15/26	07/21/2019	JJ
G06Q 20/20, 30/60	07/21/2019	JJ

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
704	270,275	07/21/2019	JJ
705	15, 16	07/21/2019	JJ

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
EAST Search History	07/21/2019	JJ
Reviewed for 101	07/21/2019	JJ
Reviewed for DP	07/21/2019	JJ
Inventor Search	07/21/2019	JJ
EAST Search History Update	01/04/2020	JJ

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<i>Search Notes</i> 	Application/Control No. 16/274,170	Applicant(s)/Patent Under Reexamination Carpenter et al.
	Examiner JAKIEDA R JACKSON	Art Unit 2657

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

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<i>Index of Claims</i> 	Application/Control No. 16/274,170	Applicant(s)/Patent Under Reexamination Carpenter et al.
	Examiner JAKIEDA R JACKSON	Art Unit 2657

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	07/21/2019	01/04/2020							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4	✓	✓							
	5	✓	✓							
	6	✓	✓							
	7	✓	✓							
	8	✓	✓							
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	15	✓	=							
	16	✓	=							
	17	✓	=							
	18	✓	-							
	19	✓	=							
	20	✓	=							
	21		=							
	22		=							

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	158	(recogni\$6 identif\$6) with (past\$4 previous\$4 recent\$4) near2 customer\$4 same (past\$4 previous\$4 recent\$4) near2 order\$4	US-PGPUB; USPAT	OR	OFF	2020/01/04 15:23
L2	1	"20190171711".did.	US-PGPUB; USPAT	OR	OFF	2020/01/04 15:51
L3	0	"20190171711".did. and data\$4 near2 connection\$4 and deactivat\$4 near2 order\$4	US-PGPUB; USPAT	OR	OFF	2020/01/04 15:51
L4	1	"20190171711".did. and data\$4 near2 connection\$4	US-PGPUB; USPAT	OR	OFF	2020/01/04 15:52
L5	0	"20190171711".did. and data\$4 near2 connection\$4 and deactivat\$4	US-PGPUB; USPAT	OR	OFF	2020/01/04 15:52
L6	0	"20190171711".did. and data\$4 near2 connection\$4 and de\$4activat\$4	US-PGPUB; USPAT	OR	OFF	2020/01/04 15:52
L7	101865	"20190171711".did. and data\$4 near2 connection\$4 on\$4sit\$4	US-PGPUB; USPAT	OR	OFF	2020/01/04 15:53
L8	1	"20190171711".did. and data\$4 near2 connection\$4 and on\$4sit\$4	US-PGPUB; USPAT	OR	OFF	2020/01/04 15:53
L9	0	"20190171711".did. and data\$4 near2 connection\$4 and on\$4sit\$4 same complet\$4 near2 order\$4	US-PGPUB; USPAT	OR	OFF	2020/01/04 15:54
L10	1	"20190171711".did. and data\$4 near2 connection\$4 and on\$4sit\$4 same complet\$4	US-PGPUB; USPAT	OR	OFF	2020/01/04 15:54
L11	0	"20190171711".did. and data\$4 near2 connection\$4 and on\$4sit\$4 same complet\$4 with order\$4	US-PGPUB; USPAT	OR	OFF	2020/01/04 15:54
L12	382	(order\$4 near2 process\$5 or (POS)) and (assist\$6 help\$4) with complete\$4 near2 order\$4	US-PGPUB; USPAT	OR	OFF	2020/01/04 16:06
L13	0	(order\$4 near2 process\$5 or (POS)) and (assist\$6 help\$4) with complete\$4 near2 order\$4 same de\$4activat\$4	US-PGPUB; USPAT	OR	OFF	2020/01/04 16:07
L14	50	(order\$4 near2 process\$5 or (POS)) same (assist\$6 help\$4) with complete\$4 near2 order\$4	US-PGPUB; USPAT	OR	OFF	2020/01/04 16:07
L15	246	(order\$4 near2 process\$5 or (POS)) same (assist\$6 help\$4 agent\$4 employee\$4 human\$4) with complete\$4 near2 order\$4	US-PGPUB; USPAT	OR	OFF	2020/01/04 16:12
L16	196	l15 not l14	US-	OR	OFF	2020/01/04

			PGPUB; USPAT			16:13
L17	4	l15 not l14 and (exeception\$4 customi\$6 personali\$9) near2 order\$4	US- PGPUB; USPAT	OR	OFF	2020/01/04 16:15
L18	22	l15 not l14 and (exeception\$4 customi\$6 personali\$9 mistak\$4) near6 order\$4	US- PGPUB; USPAT	OR	OFF	2020/01/04 16:16
L19	18	l18 not l17	US- PGPUB; USPAT	OR	OFF	2020/01/04 16:16
L20	45	l15 not l14 and (exeception\$4 customi\$6 personali\$9 mistak\$4 special\$4) near6 order\$4	US- PGPUB; USPAT	OR	OFF	2020/01/04 16:23
L21	23	l20 not l18	US- PGPUB; USPAT	OR	OFF	2020/01/04 16:23
S1	1	"20190171711".did.	US- PGPUB; USPAT	OR	OFF	2019/07/13 21:45
S2	89	(POS or (point\$4of\$4sal\$4)) same order\$4 and (STT or (speech\$4to\$4text\$4) or transcri\$9) and (IVR or (interactiv\$4 near2 virtual\$4) or avatar\$4 or (artificial\$4 near2 intelligen\$6))	US- PGPUB; USPAT	OR	OFF	2019/07/14 09:00
S3	25	(POS or (point\$4of\$4sal\$4)) same order\$4 and (STT or (speech\$4to\$4text\$4) or transcri\$9) and (IVR or (interactiv\$4 near2 virtual\$4) or avatar\$4 or (artificial\$4 near2 intelligen\$6)) and ((fast\$4 near2 food\$4) or (restaurant\$4))	US- PGPUB; USPAT	OR	OFF	2019/07/14 09:03
S4	1865	order\$4 and (STT or (speech\$4to\$4text\$4) or transcri\$9) and (IVR or (interactiv\$4 near2 virtual\$4) or avatar\$4 or (artificial\$4 near2 intelligen\$6)) and ((fast\$4 near2 food\$4) or (restaurant\$4))	US- PGPUB; USPAT	OR	OFF	2019/07/14 09:08
S5	64	S2 not S3	US- PGPUB; USPAT	OR	OFF	2019/07/14 09:08
S6	614	order\$4 near4 (food\$4 good\$4 servic\$4 cloth\$4) and (STT or (speech\$4to\$4text\$4) or transcri\$9) and (IVR or (interactiv\$4 near2 virtual\$4) or avatar\$4 or (artificial\$4 near2 intelligen\$6)) and ((fast\$4 near2 food\$4) or (restaurant\$4))	US- PGPUB; USPAT	OR	OFF	2019/07/14 09:13
S7	112	order\$4 near4 (food\$4 good\$4 servic\$4 cloth\$4).ab.bsum. and (STT or (speech\$4to\$4text\$4) or transcri\$9) and (IVR or (interactiv\$4 near2 virtual\$4) or avatar\$4 or (artificial\$4 near2 intelligen\$6)) and ((fast\$4 near2 food\$4) or (restaurant\$4))	US- PGPUB; USPAT	OR	OFF	2019/07/14 09:14
S8	0	Jakieda.xp. and (waiter\$4 waitress\$4)	US- PGPUB; USPAT	OR	OFF	2019/07/21 15:25
S9	1	Jakieda and (waiter\$4 waitress\$4)	US- PGPUB; USPAT	OR	OFF	2019/07/21 15:25

S10	2	("10013982" "7526466").pn.	US-PGPUB; USPAT	OR	OFF	2019/07/21 15:38
S11	2	("10013980" "7526466").pn.	US-PGPUB; USPAT	OR	OFF	2019/07/21 15:38
S12	3	("10013980" "7526466").pn. or "20030018531".did.	US-PGPUB; USPAT	OR	OFF	2019/07/21 15:38
S13	7	("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:27
S14	0	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and crowdsourc\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:28
S15	0	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and crowd\$4sourc\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:28
S16	4	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and (ton\$4 inflection\$4 emotion\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:29
S17	0	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and (DNN or (deep\$4 near2 neural\$4))	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:32
S18	1	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and (warn\$6 alert\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:33
S19	6	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and (bas\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:36
S20	0	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and (bas\$4) near2 station\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:36
S21	1	"20190171711".did.	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:37
S22	1	"20190171711".did. and strength\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:37
S23	1	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and strength\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:38
S24	6	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and customer\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:39
S25	5	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and pay\$6	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:42

S26	5	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and real\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:43
S27	7	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and (suggest\$8 recommend\$9 option\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:46
S28	1	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and ((tak\$4 near2 control\$4) or audit\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:53
S29	0	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and soda\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:57
S30	2	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and coke\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:57
S31	9543	customer\$4 near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9)	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:03
S32	1	customer\$4 near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9) and costumer\$4 near2 servic\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:04
S33	8810	(user\$4 customer\$4) near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9) and (user\$4 costumer\$4) near2 servic\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:04
S34	79	(user\$4 customer\$4) near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9) and (user\$4 costumer\$4) near2 servic\$4 and (compar\$4 match\$4) near3 script\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:05
S35	41	(user\$4 customer\$4) near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9) and (user\$4 costumer\$4) near2 servic\$4 and (compar\$4 match\$4) near3 script\$4 and ((tak\$4 pass\$4) near2 control\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:06
S36	41	(user\$4 customer\$4) near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9) and (user\$4 costumer\$4) near2 servic\$4 and (compar\$4 match\$4) near3 script\$4 and ((tak\$4 pass\$4) near2 control\$4) and (call\$4 customer\$4) near2 (center\$4 servic\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:08
S37	9	(transcri\$9 STT or (speech\$4to\$4text\$)) same crowd\$4sourc\$4 and order\$4 with (goods\$4 services\$4 products\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:19
S38	18	order\$4 with (goods\$4 services\$4 products\$4) and metadata\$4 near2 tag\$2 same (tone\$4 inflection\$4 emotion\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:27
S39	2	order\$4 with (goods\$4 services\$4 products\$4) and metadata\$4 near2 tag\$2 same (tone\$4 inflection\$4 emotion\$4) same (transcri\$9 STT or (speech\$4to\$4text\$))	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:27
S40	121	order\$4 with (goods\$4 services\$4 products\$4) and (transcri\$9 STT or (speech\$4to\$4text\$)) and (DNN\$4 or (deep\$4 near2 neural\$4 near2 network\$4))	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:37

S41	12	order\$4 with (goods\$4 services\$4 products\$4).ab,bsum.ti. and (transcri\$9 STT or (speech\$4to\$4text\$4)) and (DNN\$4 or (deep\$4 near2 neural\$4 near2 network\$4))	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:38
S42	96	order\$4 with (goods\$4 services\$4 products\$4).ab,bsum.ti. and (DNN\$4 or (deep\$4 near2 neural\$4 near2 network\$4))	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:40
S43	84	S42 not S41	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:40
S44	22	order\$4 near2 (goods\$4 services\$4 products\$4).ab,bsum.ti. and (DNN\$4 or (deep\$4 near2 neural\$4 near2 network\$4))	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:41
S45	144	order\$4 with (goods\$4 services\$4 products\$4).ab,bsum.ti. and (transcri\$9 STT or (speech\$4to\$4text\$4)) and (defin\$6 meaning\$4) near2 (word\$4 phras\$4 utteranc\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:47
S46	23	order\$4 with (goods\$4 services\$4 products\$4).ab,bsum.ti. and (transcri\$9 STT or (speech\$4to\$4text\$4)) and (defin\$6 meaning\$4) near2 (word\$4 phras\$4 utteranc\$4) same natural\$4 near2 languag\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:47
S47	1	order\$4 near4 (food\$4 good\$4 servic\$4 cloth\$4).ab,bsum. and (STT or (speech\$4to\$4text\$4) or transcri\$9) and (decreas\$6 less\$5) near3 strength\$6 near3 audio\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:58
S48	1	order\$4 near4 (food\$4 good\$4 servic\$4 cloth\$4) and (STT or (speech\$4to\$4text\$4) or transcri\$9) and (decreas\$6 less\$5) near3 strength\$6 near3 audio\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:59
S49	2	(STT or (speech\$4to\$4text\$4) or transcri\$9) and (decreas\$6 less\$5) near3 strength\$6 near3 audio\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:59
S50	6539	(user\$4 customer\$4) near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9) and (user\$4 costumer\$4) near2 servic\$4 and (((tak\$4 pass\$4) near2 control\$4) or rout\$4 or overrid\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 18:03
S51	38	(user\$4 customer\$4) near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9) and (user\$4 costumer\$4) near2 servic\$4 and (((tak\$4 pass\$4) near2 control\$4) or rout\$4 or overrid\$4) and (updat\$4 modif\$9 edit\$4) near2 order\$4 same review\$5	US-PGPUB; USPAT	OR	OFF	2019/07/21 18:04
S52	51	(user\$4 customer\$4) near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9) and (user\$4 costumer\$4) near2 servic\$4 and (compar\$4 match\$4) near2 script\$6	US-PGPUB; USPAT	OR	OFF	2019/07/21 18:12
S53	571	order\$4 with (goods\$4 services\$4 products\$4).ab,bsum.ti. and overrid\$6 near2 (system\$4 devic\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 18:20
S54	3	order\$4 with (goods\$4 services\$4 products\$4).ab,bsum.ti. and (manager\$4 supervisor\$6) near3 overrid\$6 near2 (system\$4 devic\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 18:21
S55	5976	(help\$5 assistan\$6) with (human\$4 agent\$4	US-	OR	OFF	2019/07/21

		manager\$6 supervisor\$4 representativ\$4) and (agent\$4) and (IVR or (interactiv\$4 near2 voic\$4) or (avatar))	PGPUB; USPAT			19:25
S56	1755	(help\$5 assistan\$6) with (human\$4 agent\$4 manager\$6 supervisor\$4 representativ\$4 agent\$4) same (IVR or (interactiv\$4 near2 voic\$4) or (avatar))	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:26
S57	90	(help\$5 assistan\$6) with (human\$4 agent\$4 manager\$6 supervisor\$4 representativ\$4 agent\$4) near4 (control\$4 overrid\$4 route\$5) same (IVR or (interactiv\$4 near2 voic\$4) or (avatar))	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:26
S58	57	(help\$5 assistan\$6) with (human\$4 agent\$4 manager\$6 supervisor\$4 representativ\$4 agent\$4) near4 (control\$4 overrid\$4 route\$5) same (IVR or (interactiv\$4 near2 voic\$4) or (avatar)) and (compar\$6 match\$5)	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:35
S59	3	(help\$5 assistan\$6) with (human\$4 agent\$4 manager\$6 supervisor\$4 representativ\$4 agent\$4) near4 (control\$4 overrid\$4 route\$5) same (IVR or (interactiv\$4 near2 voic\$4) or (avatar)) and (compar\$6 match\$5) near2 (script\$8 order\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:35
S60	0	(human\$4 agent\$4 manager\$6 supervisor\$4 representativ\$4 agent\$4) near4 (control\$4 overrid\$4 route\$5) same (IVR or (interactiv\$4 near2 voic\$4) or (avatar)) and (compar\$6 match\$5) near2 (script\$8 order\$4) with updat\$6	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:36
S61	12	(human\$4 agent\$4 manager\$6 supervisor\$4 representativ\$4 agent\$4) same (IVR or (interactiv\$4 near2 voic\$4) or (avatar)) and (compar\$6 match\$5) near2 (script\$8 order\$4) with updat\$6	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:37
S62	2452	(compar\$6 match\$5) near2 (script\$8 order\$4) with updat\$6	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:38
S63	34	(compar\$6 match\$5) near2 (script\$8 order\$4) with updat\$6 and (human\$4 agent\$4 manager\$6 supervisor\$4 representativ\$4 agent\$4) and (IVR or (interactiv\$4 near2 voic\$4) or (avatar))	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:38
S64	22	S63 not S61	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:39
S65	70	(compar\$6 match\$5) near2 (script\$8) with updat\$6	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:40
S66	1	"10013980".pn.	USPAT	OR	OFF	2019/07/21 21:07
S67	0	"20100158236".did.	USPAT	OR	OFF	2019/07/21 21:11
S68	0	"20100158236".pn.	USPAT	OR	OFF	2019/07/21 21:11
S69	1	"20100158236".did.	US-PGPUB; USPAT	OR	OFF	2019/07/21 21:11

S70	0	"20180165691.did",	US-PGPUB; USPAT	OR	OFF	2019/07/21 21:19
S71	1	"20180165691".did.	US-PGPUB; USPAT	OR	OFF	2019/07/21 21:19
S72	1	"20180165691".did. and (error\$4 mistak\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 21:19

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Filed Electronically on October 25, 2019

PATENT
Dkt. 1397-4-NP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **Robley Carpenter II, Jacob Poore & Benjamin Thielker**
Assignee: **VALYANT AI, INC.**
Filed: **February 12, 2019** Group No.: **2657**
Application No. **16/274,170** Examiner: **Jakieda R. Jackson**
For: **ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM**

Mail Stop Amendment
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO THE NON-FINAL OFFICE ACTION
MAILED JULY 26, 2019

Sir:

Please enter the following amendments in the above referenced U.S. National
Phase patent application.

Amendments to the Specification can be found on page 2.

Amendments to the Claims are reflected in the listing of claims beginning on page 5.

Remarks begin on page 12.

Amendments to the Specification

Please amend paragraph [00031] of the specification as follows:

Turning to the figures, FIG. 1 is an illustration of a scenario at a drive-through restaurant 12 utilizing an order processing system where an on-site employee takes orders, receives payment and delivers food to customers. Such a system can be employed as a back-up where human intervention is required when the order-processing system according to aspects of the invention experiences a fault and needs to pass control of the artificially intelligent order processing system to an on-site employee.

Please amend paragraph [00033] of the specification as follows:

FIG. 2 is a diagram depicting the components and the flow of data in an order processing system **10** according to aspects of an embodiment of the invention. In the artificially intelligent order processing system according to FIG. 2 the artificially intelligent order processing system is in training mode and the on-site employee **81** is responsible for taking orders, taking payment, and delivering food to a customer **25**. However, in an embodiment, the artificially intelligent order processing system is configured the audio feed from order station microphone **21** to train the artificially intelligent order processing system **10** for future implementation and substitution of the on-site employee **81** in the order function. Accordingly, an on-site computer **31** is added to the artificially intelligent order processing system in an embodiment as depicted in FIG. 1. The on-site computer **31** is placed in the audio stream after the base station **80** to enable the artificially intelligent order processing system **10** to “listen” to audio communications occurring between a customer and an employee in that specific business (e.g. McDonalds TM, Chik-Fil-A TM or Bank of America) or business segment (e.g.

drive-through restaurant, drive-up bank, pick-up window at a drug store, or payment gate for a parking lot), thus facilitating the training of a deep neural network (DNN) system (e.g. DNN **45**).

Please amend paragraph [00038] of the specification as follows:

The audio, text, and metadata from the audio clips are then transmitted from the transcription unit **44** to a Deep Neural Network **45** (DNN), where they are used to develop a Speech-to-Text System **41**. Such transmission is intended to provide the ability to approximately detect frustration levels, age, gender and demographics of future customers. The DNN receives the audio, text and metadata and runs specific training programs on each of these items. The artificially intelligent order processing system in an embodiment is configured to utilize the audio to build a pattern recognition program constituting a speech-to-text module. Thus, when the artificially intelligent order processing system or speech-to-text module element encounters an audio clip in a live environment, the artificially intelligent order processing system or speech-to-text module element can quickly relate the audio clip to other audio clips encountered during training, and then cross-reference the accompanying text with those audio clips. In this manner, the speech-to-text converter infers the text from the audio based on comparison of the new live audio with the past training audio.

Please amend paragraph [00042] of the specification as follows:

An embodiment of the artificially intelligent order processing system is configured such that the transcribed text from the audio clips are then transmitted from the Speech-to-Text System **41** to a Natural Language Processor **51**, also employing a

Deep Neural Network **45**, where meaning is pulled from, or assigned to, the speech following its recognition by the Speech-to-Text System **41**. In the initial training stage the audio, text, and metadata from the clips are transmitted from the Natural Language Processor **51** to a storage device **55** for future access. In an embodiment, storing data facilitates tasks including re-testing the artificially intelligent order processing system, such as in instances where the artificially intelligent order processing system encounters difficulty in the identification of certain, words, phrases or tones.

Amendments to the Claims:

This listing of claims replaces all previous versions and listings of claims in the application.

Listing of Claims

1. (Currently amended) A method ~~of training a natural language ordering system~~ comprising the steps of:

providing an audio stream of customer ordering transactions;

slicing the audio stream into short clips;

transcribing the short clips into text using a transcription unit;

adding metadata tags to the transcribed text using the transcription unit;

training a speech-to-text system by populating the artificially intelligent order

processing system with the transcribed text having the metadata tags;

recognizing an identity of a customer with a business processor;

correlating the identity of the customer with at least one past order with the

business processor; and

querying the customer with an order addition based on the at least one past order

as directed by the business processor.

2. (Original) The method according to claim 1 wherein the transcription unit is a crowd source platform.

3. (Original) The method according to claim 1 wherein the metadata tags provide data regarding tone or inflection that would be lost in a traditional speech-to-text conversion.

4. (Original) The method according to claim 1 wherein the speech-to-text system employs a deep neural network.

5. (Original) The method according to claim 1 further comprising the steps of: identifying a word or phrase in the text using the speech-to-text processor; and providing meaning for the identified word or phrase using a natural language processor.

6. (Currently amended) The method according to claim 5 further comprising the step of generating an order with the [[a]] business processor using the identified word or phrase from the natural language processor.

7. (Original) The method according to claim 5 wherein the natural language processor is configured to trigger an alert when a warning condition is encountered.

8. (Original) The method according to claim 7 wherein the warning condition is a word or phrase indicative of customer dissatisfaction or confusion.

9. (Original) The method according to claim 1 wherein the audio stream used for text transcription is a stream from a customer accessible microphone to a base station.

10. (Original) The method according to claim 9 wherein further comprising the step of decreasing the strength of the audio stream prior to transmission to the transcription unit.

11. (Currently amended) A method of ~~speech recognition-based order processing~~

comprising the steps of:

providing an audio stream of an order of a customer positioned on a site order;

providing an order processor having a speech recognition module trained using

artificial intelligence programs;

converting a word or words in the audio stream to text using the speech

recognition module;

processing the text communication with the speech recognition module to identify

a word or words in the text of the converted audio stream according to a

previous spoken word training;

providing a natural language processor having order assembly capabilities and

exception detection capabilities, wherein the natural language processor

receives recognized text from the order processor and creates or modifies

an order based upon the recognized text;

generating an order with the natural language processor;

alerting an auditor of detected exceptions in the order, the auditor located off-site
and connected to the order processor via a data connection; and
deactivating the order processor with the auditor in response to the detected
exceptions in the order; and
prompting an on-site employee to engage the customer and complete the order
~~transmitting the order to a business processor, wherein the business processor~~
~~communicates with a point-of-sale system to collect payment and provide~~
~~notifications to release the ordered product or service.~~

12. (Original) The method according to claim 11 wherein the order is processed in real time.

13. (Currently amended) The method according to claim 17 ~~11~~ wherein the a
business processor receives order information from the natural language processor (NLP)
NLP and performs the steps of:

associating the order items with one or more additional menu items or options
associated with the order items; and
querying the customer about the one or more additional menu items or options
associated with the order items, wherein the NLP updates the order based
upon the customer response to the query.

14. (Original) The method according to claim 13 further comprising the steps of:

providing a text-to-speech processor to convert queries from the business processor into audio to be communicated to a customer; and processing the text with the text-to-speech processor to create an audio communication of the query generated by the business processor.

15. (Currently amended) The method according to claim 11 ~~12~~ wherein the alert to the auditor prompts the auditor to switch the order processor from an autonomous mode to an auditor-assist mode prior to deactivating the order processor ~~take control of the order processing system.~~

16. (Currently amended) The method according to claim 17 ~~15~~ further comprising the steps of reviewing an order by ~~an~~ the auditor by comparing the order generated by the natural language processor to the communication in the audio stream and updating the order based upon auditor review.

17. (Currently amended) A method ~~of speech recognition-based order processing~~ comprising the steps of:

providing an audio stream of an order of a customer ~~order~~ to a speech-to text processor, the customer positioned on a site;

providing an order processor incorporating a speech recognition module trained using artificial intelligence programs;

converting a word or words in the audio stream to text using the speech recognition module;

processing the text communication with the speech recognition module to identify
a word or words in the text of the converted audio stream according to a
previous spoken word training;

providing a natural language processor having order assembly capabilities and
exception detection capabilities, wherein the natural language processor
receives recognized text from the order processor and creates or modifies
the order based upon the recognized text;

generating an order with the natural language processor;

providing an audio stream of a customer order to an auditor, the auditor located
off-site and connected to the order processor via a data connection;

providing the generated order to the auditor;

performing a comparison of the audio stream of a customer order with the
generated order by the auditor;

switching the order processor from an autonomous mode to an auditor-assist
mode in response to the comparison of the audio stream with the generated
order;

updating the order processor based upon errors detected in the order by the
auditor; ~~and~~

deactivating the order processor with the auditor; and

transmitting the generated order to an on-site employee to communicate with the
customer, a business processor, wherein the business processor
~~communicates with a point-of-sale system~~ to collect payment from the

customer, and to provide notifications to release the ordered product or service to the customer.

Claims 18 (Cancelled).

19. (Original) The method according to claim 17 further comprising the steps of:
providing a text-to-speech processor to convert queries from the business
processor into audio to be communicated to a customer; and
processing the text with the text-to-speech processor to create an audio
communication of the query generated by the business processor.

20. (Currently amended) The method according to claim 17 further comprising
the step of alerting the auditor by the natural language processor (NLP) of any exceptions
detected by the artificially intelligent order processing system, wherein the auditor can
override the artificially intelligent order processing system based upon the detected
exception.

21. (New) The method according to claim 17 wherein the auditor deactivates the
order processor in response to a detected change in customer traffic.

22. (New) The method according to claim 17 wherein the auditor deactivates the
order processor in response to a detected change in staffing at the site.

Remarks

Claims 1-20 were rejected in the non-final Office Action mailed July 26, 2019. Claims 18 and 19 have been cancelled and claims 21 and 22 have been newly presented while claims 1, 6, 11, 13, 15-17, and 20 have been amended. The subject matter of the amended and newly presented claims is supported at least by FIGS. 3-5 and para. [00023-00025] & [00051] of the specification. No new matter has been presented. Entrance of the amendments is respectfully requested.

Rejection of Claims Under 35 U.S.C. §102(a)(1)

Claims 1 and 9 have been rejected as allegedly being anticipated by Negreiro (US 7,110,963). These rejections are respectfully traversed.

Independent claim 1 has been amended to recite a business processor recognizing an identity of a customer, correlating the identity of the customer with at least one past order, and querying the customer with an order addition based on the at least one past order. An ordinary artisan would fail to find any disclosure in Negreiro, or any other art of record, of the claimed customer recognition and querying of an order addition.

In Negreiro, the ordinary artisan would find speech recognition of keywords that are used to conduct business. See FIG. 3-11; col. 3, ln. 19 to col. 7, ln. 39. The ordinary artisan would recognize that Negreiro is silent with regard to identifying a customer or querying the customer with order additions based on the detected customer identity. Instead, Negreiro would be understood as utilizing the capabilities of the service staff (27/29/31) to conduct customer interactions without any disclosure or suggestion of providing the staff with an order suggestion, as claimed. See col. 7, ln. 40 to col. 8, ln. 27.

The silence of Negreiro with respect to the claimed customer identification and order addition query based on that identification does not provide sufficient support for the ordinary artisan to render the present claims anticipated. See *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628 (Fed. Cir. 1987); *In re Bond*, 910 F.2d 831 (Fed. Cir. 1990); MPEP §2131. Accordingly, reconsideration and allowance of claims 1 and 9 is respectfully requested.

Rejection of Claims Under 35 U.S.C. §103

Claims 2-8 and 10-20 have been rejected for allegedly being unpatentable over Negreiro in view of Brelig (US 9,646,286), Sankaranarayanan (US 8,879,242), Erbey (US 2012/0317038), Kim (US 2018/ 0277107), Tsao (US 9,239,987), Szabo (US 7,184,438), Borsutsky (US 10,013,980), and Heater (US 2018/0165691). These rejections are respectfully traversed.

As discussed above, Negreiro is silent with respect to the identification of a customer and querying of an order addition based on that identification. The ordinary artisan would further find Negreiro silent with respect to the switching of an order processor between autonomous and auditor-assisted modes as well as deactivating an order processor to pass customer order control to an on-site employee, as claimed in independent claims 11 and 17. Such silence would not provide any reasonable motivation for the ordinary artisan to alter and/or combine Negreiro with any other cited reference to arrive at the present claims.

Review of Brelig, Sankaranarayanan, Tsao, Szabo, and Kim by the ordinary artisan would also reveal that each reference is silent with respect to the claimed deactivation of an order processor by an auditor to pass order control to an on-site

employee. The silence of the respective references would not logically provide any teaching of the present claims or motivation to alter and/or combine the references to arrive at the present claims.

In Erbey, the ordinary artisan would find customer interaction being exclusively autonomous via scripts generated by a scripting system (104). See FIG. 3; para. [0091-0101]. The sophistication of the processing in Erbey would be appreciated by the ordinary artisan as providing autonomous computing response to a variety of customer actions to complete one or more tasks. See *Id.* The autonomous configuration of the system in Erbey, along with the silence of the reference with respect to deactivating a customer order processing to pass customer control to an on-site employee, would cause the ordinary artisan to conclude that Erbey fails to teach the subject matter of the present claims or provide any reasonable motivation to arrive at the present claims.

The ordinary artisan would similarly characterize Borsutsky as being directed exclusively to the autonomous handling of customers with computing processing. The ordinary artisan would point at least to FIGS. 1-21 and col. 6, ln. 10 to col. 16, ln. 27 of Borsutsky as teaching how a computing system can service a customer without the use of an on-site, in-person employee, which contradicts the claimed deactivation of an order processor to pass customer control to an on-site employee. Thus, the ordinary artisan would characterize Borsutsky as teaching away from the present claims, which would not provide any reasonable motivation to use the teachings of Borsutsky to arrive at the present claims. See *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994); MPEP §2143.03(VI).

In Heater, the ordinary artisan would understand that an agent (131) can intervene in an automated customer query answering process. See FIG. 1; para. [0035-0047]. While

Heater teaches an agent supervising a customer query and perhaps talking to the customer (106) via a telephone, the ordinary artisan would identify that Heater exclusively positions the agent remotely from the customer. See *Id.* The ordinary artisan would appreciate that the on-site, in-person employee of the present claims allows for more effective “up-selling” and customer satisfaction than a phone call with a person, particularly in situations where an error or delay has prompted deactivation of an automated order processor. See para. [00050-00052] of the specification. Therefore, the ordinary artisan would conclude that Heater fails to teach the claimed deactivation of an automated order processor by a remote auditor to pass customer control to an on-site employee.

In sum, Negreiro, Breilig, Sankaranarayanan, Tsao, Szabo, and Kim would each be characterized as silent with respect to the claimed processor deactivation and customer control passing to an on-site employee while Borsutsky would be characterized as teaching away from the present claims and Erbey and Heater would each be characterized as failing to teach the on-site employee taking a customer’s order in the place of an automated system. The failure of each cited reference to teach the subject matter of the present claims or provide motivation to alter and/or combine the references to arrive at the present claims cannot sufficiently support a prima facie case of obviousness in view of *KSR and* MPEP §2143. See *KSR v. Teleflex Inc.*, 82 USPQ 2d 1385 (2007); *In re McLaughlin*, 443 F.2d 1392 (CCPA 1971). Accordingly, reconsideration and allowance of claims 2-8 and 10-20 is respectfully requested.

Conclusion

This Response is intended to be a complete response to the non-final Office Action mailed July 26, 2019. The Applicant respectfully requests reconsideration and allowance of all of the claims pending in the application. For the record, silence on the part of the Applicant with regard to any statements made by the Examiner in the present rejection will not be taken as acquiescence to such statements.

Should any questions arise concerning this application, the Examiner is invited to contact the below signed attorney.

Respectfully submitted,

By: /Tyler J. Mantooth/

Jeffrey R. Schell, Registration No. 71,546
Tyler J. Mantooth, Registration No. 60,162
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Telephone: (405) 553-2828
Customer No. 120775

Electronic Patent Application Fee Transmittal

Application Number:	16274170			
Filing Date:	12-Feb-2019			
Title of Invention:	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM			
First Named Inventor/Applicant Name:	Robley Carpenter			
Filer:	Tyler Joseph Mantooth/Diana Anderson			
Attorney Docket Number:	1397-4-NP			
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	2202	1	50	50
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				50

Electronic Acknowledgement Receipt

EFS ID:	37567727
Application Number:	16274170
International Application Number:	
Confirmation Number:	4761
Title of Invention:	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM
First Named Inventor/Applicant Name:	Robley Carpenter
Customer Number:	120775
Filer:	Tyler Joseph Mantooth/Diana Anderson
Filer Authorized By:	Tyler Joseph Mantooth
Attorney Docket Number:	1397-4-NP
Receipt Date:	25-OCT-2019
Filing Date:	12-FEB-2019
Time Stamp:	16:26:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$50
RAM confirmation Number	E201900G27010418
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	2019-10-25-AmendTrans.pdf	102336	no	3
			19fbc01a9444a896a6b39d35b4ce0c04b61a2a1e		
Warnings:					
Information:					
2		2019-10-25-AmendAfterNonfinalRej.pdf	747504	yes	16
			8eaf1913b45ca791e67ee4741f361331daceaccc		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Specification		2	4	
	Claims		5	11	
	Applicant Arguments/Remarks Made in an Amendment		12	16	
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30071	no	2
			2bcb132700770c03696a8f76150311643e734f88		
Warnings:					
Information:					
Total Files Size (in bytes):			879911		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Robley Carpenter II, Jacob Poore & Benjamin Thielker

Application No.: 16/274,170

Filed: 02/12/2019

For: ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM

CERTIFICATE OF EFS SUBMISSION (CEFS)(37 C.F.R. § 1.8(a)(i)(1)(C))

I hereby certify that on October 25, 2019 the following correspondence:

Name of Paper: Amendment and Transmittal

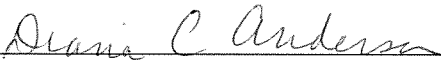
Number of Pages: 19

Fees: Additional dependent claim

Amount: \$ 50.00

Payment By: Credit Card

is being submitted to the Patent and Trademark Office via the Office Electronic Filing System in accordance with § 1.6(a)(4) at _____ local time.



Signature

Telephone Number: 405-553-2828

Diana C. Anderson

Type or print name of person certifying

Filed Electronically on October 25, 2019

PATENT
Dkt. 1397.4-NP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **Robley Carpenter II, Jacob Poore & Benjamin Thielker**
Assignee: **VALYANT AI, INC.**
Filed: **February 12, 2019** Group No.: **2657**
Application No. **16/274,170** Examiner: **Jakieda R. Jackson**
For: **ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM**

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT TRANSMITTAL

1. Transmitted herewith is an amendment for this application.

STATUS

2. Applicant is a small entity. A statement was already filed.

EXTENSION OF TERM

3. The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136 apply. Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

FEE FOR CLAIMS

4. The fee for claims (37 C.F.R. 1.16(b)-(d)) has been calculated as shown below:

	(Col. 1)	(Col. 2)	(Col. 3)	SMALL ENTITY			
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NO. PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDIT. FEE		
TOTAL	21	— 20	= 8	x \$ 50.00	= \$	50.00	
INDEP.	3	— 3	= 0	x \$ 230.00	= \$	0.00	
FIRST PRESENTATION OF MULTIPLE DEP. CLAIM			+	\$ 410.00	= \$	0.00	
				TOTAL			
				ADDIT. FEE	\$	50.00	
Total additional fee for claims required \$ 50.00							

FEE PAYMENT

5. Authorization is hereby made to charge the amount of \$50.00 to Credit card as shown on the attached electronic credit card information authorization. Credit overpayment in same manner.

Charge any additional fees required by this paper to Deposit Account 506295.

FEE DEFICIENCY

6. If an additional extension and/or fee is required, charge Account No. 506295.

If an additional fee for claims is required, charge Account No. 506295.

Respectfully submitted,

Date: October 25, 2019

/Tyler J. Mantooth/
Jeffrey R. Schell, Registration No. 71,546
Tyler J. Mantooth, Registration No. 60,162
Rocky Mountain Patent LLC
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Telephone: 405-553-2828
Customer No. 120775

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 16/274,170		Filing Date 02/12/2019		☐ To be Mailed	
ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO									
APPLICATION AS FILED - PART I									
		(Column 1)	(Column 2)						
FOR		NUMBER FILED	NUMBER EXTRA		RATE (\$)		FEE (\$)		
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A		N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A	N/A		N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A	N/A		N/A				
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 = *		x \$50 =					
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 = *		x \$230 =					
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).							
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))									
* If the difference in column 1 is less than zero, enter "0" in column 2.					TOTAL				
APPLICATION AS AMENDED - PART II									
		(Column 1)		(Column 2)	(Column 3)				
AMENDMENT	10/25/2019	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 21	Minus	** 20	= 1	x \$50 =		50	
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0	x \$230 =		0	
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						TOTAL ADD'L FEE		50	
		(Column 1)		(Column 2)	(Column 3)				
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	*	Minus	**	=	x \$0 =			
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x \$0 =			
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						TOTAL ADD'L FEE			
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.						LIE			
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".						/MONICA D FRANCIS/			
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".									
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.									

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/274,170	02/12/2019	Robley Carpenter II	1397-4-NP	4761
120775	7590	07/26/2019		
Rocky Mountain Patent LLC 1800 Wazee St., Suite 300 Denver, CO 80202			EXAMINER JACKSON, JAKIEDA R	
			ART UNIT	PAPER NUMBER
			2657	
			NOTIFICATION DATE	DELIVERY MODE
			07/26/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@dockettrak.com
cbursey@hallestill.com
okcipdocketing@hallestill.com

Office Action Summary**Application No.**

16/274,170

Applicant(s)

Carpenter et al.

Examiner

JAKIEDA R JACKSON

Art Unit

2657

AIA (FITF) Status

Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/12/19.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

- 5) ☒ Claim(s) 1-20 is/are pending in the application.
5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-20 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 2/20/19 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some** c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date ____.
- 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 4) ☐ Other: ____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

Claim(s) 1 and 9 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Negreiro (USPN 7,110,963).

Regarding **claim 1**, Negreiro discloses a method of training a natural language ordering system comprising the steps of:

providing an audio stream of customer ordering transactions (figure 11, element 507 with dialog to place order; column 3, line 39 – column 4, line 65 with column 6, lines 1-41);

slicing the audio stream into short clips (parsing stream; column 5, lines 25-50);

transcribing the short clips into text using a transcription unit (figure 5, element 227 and column 3, line 39 – column 4, line 65);

adding metadata tags to the transcribed text using the transcription unit (codes; column 3, line 39 – column 4, line 65);

training a speech-to-text system by populating the artificially intelligent order processing system with the transcribed text having the metadata tags (training data; column 3, line 39 – column 4, line 65).

Regarding **claim 9**, Negreiro discloses a method wherein the audio stream used for text transcription is a stream from a customer accessible microphone to a base station (figure 3 with column 3, lines 4-38 and column 6, lines 1-41).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Breilig et al (9,646,286), hereinafter referenced as Breilig.

Regarding **claim 2**, Negreiro discloses a method as described above, but does not specifically teach wherein the transcription unit is a crowd source platform.

Breilig discloses a method wherein the transcription unit is a crowd source platform (column 7, lines 9-35), to identify product profile.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to provide new and useful data to automating ordering processing.

Claim 3 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Sankaranarayanan (USPN 8,879,242).

Regarding **claim 3**, Negreiro discloses a method as described above, but does not specifically teach wherein the metadata tags provide data regarding tone or inflection that would be lost in a traditional speech-to-text conversion.

Sankaranarayanan discloses a method wherein the metadata tags provide data regarding tone or inflection that would be lost in a traditional speech-to-text conversion (column 4, lines 19-50), to allow synthesis.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to mark the customer interaction for classification and analysis.

Claim 3 is *alternately* rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Erbey et al. (PGPUB 2012/0317038), hereinafter referenced as Erbey.

Regarding **claim 3**, Negreiro discloses a method as described above, but does not specifically teach wherein the metadata tags provide data regarding tone or inflection that would be lost in a traditional speech-to-text conversion.

Erbey discloses a method wherein the metadata tags provide data regarding tone or inflection that would be lost in a traditional speech-to-text conversion (paragraph 0011), to receive desired outcome based on real-time changes.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to output data that reflects changes and sounds natural.

Claim 4 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view Tsao (USPN 9,239,987).

Regarding **claim 4**, Negreiro discloses a method as described above, but does not specifically teach a method wherein the speech-to-text system employs a deep neural network.

Tsao discloses a method wherein the speech-to-text system employs a deep neural network (column 7, lines 53-67), to help estimate likelihoods.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to assist with predictive modeling.

Claim 5 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view Szabo (USPN 7,184,438).

Regarding **claim 5**, Negreiro discloses a method further comprising the steps of:
identifying a word or phrase in the text (keywords; figures 5 and 7) using the speech-to-text processor (speech to text; column 3, lines 51 – column 4, line 65), but does not specifically teach providing meaning for the identified word or phrase using a natural language processor.

Szabo discloses a method providing meaning for the identified word or phrase using a natural language processor (column 72, line 63 – column 73, line 57), to provide an intelligent system for providing definitions.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, for clarity.

Regarding **claim 6**, Negreiro discloses a method further comprising the step of generating an order with a business processor using the identified word or phrase from the natural language processor (naturally ordering; column 3, line 39 – column 4, line 65).

Claims 7 and 8 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view Szabo and in further view of Sankaranarayanan,

Regarding **claim 7**, it is interpreted and rejected for similar reasons as set forth in the combination of claims 3 and 5. In addition, Sankaranarayanan discloses a method wherein the natural language processor is configured to trigger an alert when a warning condition is encountered (column 4, lines 19-50).

Regarding **claim 8**, it is interpreted and rejected for similar reasons as set forth in the combination of claims 3 and 5. In addition, Sankaranarayanan discloses a method wherein the warning condition is a word or phrase indicative of customer dissatisfaction or confusion (column 4, lines 19-50).

Claim 10 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Kim (PGPUB 2018/0277107).

Regarding **claim 10**, Negreiro discloses a method as described above, but does not specifically teach a method further comprising the step of decreasing the strength of the audio stream prior to transmission to the transcription unit.

Kim discloses a method further comprising the step of decreasing the strength of the audio stream prior to transmission to the transcription unit (paragraph 0060), to enhance speech recognition.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to modify audio transition.

Claims 11-14 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Erbey.

Regarding **claim 11**, it is interpreted and rejected for similar reasons as set forth above. In addition, Negreiro discloses a method of speech recognition-based order processing comprising the steps of:

providing an audio stream of a customer order (customer speaks naturally to order; column 6, lines 1-41);

providing an order processor having a speech recognition module trained using artificial intelligence programs (training; column 3, line 39 – column 4, line 65);

converting a word or words in the audio stream to text using the speech recognition module (speech to text; column 3, line 39 – column 4, line 65);

processing the text communication with the speech recognition module to identify a word or words in the text of the converted audio stream according to a previous spoken word training (identify keywords; column 3, line 39 – column 4, line 65);

providing a natural language processor having order assembly capabilities and exception detection capabilities, wherein the natural language processor receives recognized text from the order processor and creates or modifies an order based upon the recognized text (naturally speaks; column 3, line 39 – column 4, line 65);

generating an order with the natural language processor (customer speaks naturally to order; column 6, lines 1-41);

transmitting the order to a business processor, wherein the business processor communicates with a point-of-sale system to collect payment and provide notifications to release the ordered product or service (payment and delivery; column 8, lines 1-27), but does not specifically teach alerting an auditor of detected exceptions in the order.

Erbey discloses alerting an auditor of detected exceptions in the order (paragraph 0100).

Regarding **claim 12**, Negreiro discloses a method wherein the order is processed in real time (real-time; abstract). Furthermore, Erbey discloses real-time processing (paragraph 0014).

Regarding **claim 13**, it is interpreted and rejected for similar reasons as set forth above. In addition, Erbey discloses a method wherein the business processor receives order information from the NLP and performs the steps of:

associating the order items with one or more additional menu items or options associated with the order items (paragraph 0100); and

querying the customer about the one or more additional menu items or options associated with the order items, wherein the NLP updates the order based upon the customer response to the query (paragraph 0100).

Regarding **claim 14**, Negreiro discloses a method further comprising the steps of:

providing a text-to-speech processor to convert queries from the business processor into audio to be communicated to a customer (speech to text; column 3, line 39 – column 4, line 65); and

processing the text with the text-to-speech processor to create an audio communication of the query generated by the business processor (speech to text; column 3, line 39 – column 4, line 65).

Claims 11-14 are *alternately* rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Borsutsky et al. (USPN 10/013,980), hereinafter referenced as Borsutsky.

Regarding **claim 11**, it is interpreted and rejected for similar reasons as set forth above. In addition, Negreiro discloses a method of speech recognition-based order processing comprising the steps of:

providing an audio stream of a customer order (customer speaks naturally to order; column 6, lines 1-41);

providing an order processor having a speech recognition module trained using artificial intelligence programs (training; column 3, line 39 – column 4, line 65);

converting a word or words in the audio stream to text using the speech recognition module (speech to text; column 3, line 39 – column 4, line 65);

processing the text communication with the speech recognition module to identify a word or words in the text of the converted audio stream according to a previous spoken word training (identify keywords; column 3, line 39 – column 4, line 65);

providing a natural language processor having order assembly capabilities and exception detection capabilities, wherein the natural language processor receives recognized text from the order processor and creates or modifies an order based upon the recognized text (naturally speaks; column 3, line 39 – column 4, line 65);

generating an order with the natural language processor (customer speaks naturally to order; column 6, lines 1-41);

transmitting the order to a business processor, wherein the business processor communicates with a point-of-sale system to collect payment and provide notifications to release the ordered product or service (payment and delivery; column 8, lines 1-27), but does not specifically teach alerting an auditor of detected exceptions in the order.

Borsutsky discloses alerting an auditor of detected exceptions in the order (column 14, line 51 – column 15, line 53), to provide options.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to provide the user with a list of options and recommendations, for ease.

Regarding **claim 12**, Negreiro discloses a method wherein the order is processed in real time (real-time; abstract).

Regarding **claim 13**, it is interpreted and rejected for similar reasons as set forth above. In addition, Borsutsky discloses a method wherein the business processor receives order information from the NLP and performs the steps of:

associating the order items with one or more additional menu items or options associated with the order items (column 14, line 51 – column 15, line 53); and

querying the customer about the one or more additional menu items or options associated with the order items, wherein the NLP updates the order based upon the customer response to the query (column 14, line 51 – column 15, line 53).

Regarding **claim 14**, Negreiro discloses a method further comprising the steps of:

providing a text-to-speech processor to convert queries from the business processor into audio to be communicated to a customer (speech to text; column 3, line 39 – column 4, line 65); and

processing the text with the text-to-speech processor to create an audio communication of the query generated by the business processor (speech to text; column 3, line 39 – column 4, line 65).

Claims 15-17 and 19-20 is rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Heater et al. (PGPUB 2018/0165691), hereinafter referenced as Heater.

Regarding **claim 15**, Negreiro discloses a method as described above, but does not specifically teach wherein the alert to the auditor prompts the auditor to take control of the order processing system.

Heater discloses a method wherein the alert to the auditor prompts the auditor to take control of the order processing system (paragraphs 0037-0038), to monitor interactions just in case of an unsuccessful or incomplete interaction.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to provide the user with a list of options and recommendations, to satisfy certain criteria and customer satisfaction.

Regarding **claim 16**, it is interpreted and rejected for similar reasons as set forth above. In addition, Heater discloses a method further comprising the steps of reviewing an order by an auditor by comparing the order generated by the natural language processor to the communication in the audio stream and updating the order based upon auditor review (paragraphs 0037-0038).

Regarding **claim 17**, Negreiro discloses a method of speech recognition-based order processing comprising the steps of:

providing an audio stream of a customer order to a speech-to text processor (speech to text; column 3, line 39 – column 4, line 65);

providing an order processor incorporating a speech recognition module trained using artificial intelligence programs (train; column 3, line 39 – column 4, line 65);

converting a word or words in the audio stream to text using the speech recognition module (speech to text; column 3, line 39 – column 4, line 65);

processing the text communication with the speech recognition module to identify a word or words in the text of the converted audio stream according to a previous spoken word training (listening for keywords; column 3, line 39 – column 4, line 65);

providing a natural language processor having order assembly capabilities and exception detection capabilities, wherein the natural language processor receives recognized text from the order processor and creates or modifies the order based upon the recognized text (naturally speaks; column 3, line 51 – column 4, lines 65);

generating an order with the natural language processor (order; column 6, lines 1-41);

providing an audio stream of a customer order to an auditor (customer speaks natural; column 6, lines 1-41);

providing the generated order to the auditor (act on identification; column 6, lines 1-41);

performing a comparison of the audio stream of a customer order with the generated order by the auditor (providing feedback; abstract); and

transmitting the order to a business processor, wherein the business processor communicates with a point-of-sale system to collect payment and provide notifications to release the ordered product or service (payment and delivery; column 8, lines 1-27),

but does not specifically teach updating the order processor based upon errors detected in the order by the auditor.

Furthermore, Heater discloses a method of updating the order processor based upon errors detected in the order by the auditor (paragraphs 0058, 0038).

Regarding **claim 19**, Negreiro discloses a method further comprising the steps of:

providing a text-to-speech processor to convert queries from the business processor into audio to be communicated to a customer (speech to text; column 3, line 39 – column 4, line 65); and

processing the text with the text-to-speech processor to create an audio communication of the query generated by the business processor (speech to text; column 3, line 39 – column 4, line 65).

Regarding **claim 20**, it is interpreted and rejected for similar reasons as set for the above. In addition, Heater discloses a method further comprising the step of alerting the auditor by the NLP of any exceptions detected by the artificially intelligent order processing system, wherein the auditor can override the artificially intelligent order processing system based upon the detected exception (paragraphs 0038.

Claim 18 is rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Heater and in further view of Borsutsky.

Regarding **claim 18**, it is interpreted and rejected for similar reasons as set forth above in claim 13.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. This information has been detailed in the PTO 892 attached (Notice of References Cited).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAKIEDA R JACKSON whose telephone number is (571)272-7619. The examiner can normally be reached on Mon - Fri 6:30a-2:30p.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Washburn can be reached on 571.272.5551. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JAKIEDA R JACKSON/
Primary Examiner, Art Unit 2657

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	Examiner JAKIEDA R JACKSON		Art Unit 2657	Page 1 of 2

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20190214024-A1	07-2019	GRUBER; Thomas R.	G10L17/22	1/1
*	B	US-7110963-B2	09-2006	Negreiro; Manuel	G06K17/00	704/275
*	C	US-20130232017-A1	09-2013	NATHANEL; Tal Zvi	G06Q20/20	705/16
*	D	US-20050125293-A1	06-2005	Germinara, Gabriel A	G06Q30/06	705/15
*	E	US-20030041032-A1	02-2003	Ballin, Daniel	G06Q30/02	705/51
*	F	US-10268660-B1	04-2019	Arazi; Matan	A63F13/50	1/1
*	G	US-9646286-B2	05-2017	Brelig; Jonathan Warren	G06Q30/0201	1/1
*	H	US-8798242-B1	08-2014	Sankaranarayanan; Hari Bhaskar	H04M3/42221	379/265.03
*	I	US-20170324868-A1	11-2017	Tamblyn; Eric	H04M3/5191	1/1
*	J	US-20180101776-A1	04-2018	Osotio; Neal	G06N5/04	1/1
*	K	US-9239987-B1	01-2016	Tsao; Vivien	G06F16/24578	1/1
*	L	US-7181438-B1	02-2007	Szabo; Andrew	G06F21/6245	1/1
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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20180277107-A1	09-2018	Kim; Seon Man	G10L15/28	1/1
*	B	US-20040068443-A1	04-2004	Hopson, David B.	G06Q10/02	705/5
*	C	US-20050065851-A1	03-2005	Aronoff, Jeffrey M.	G06Q30/06	705/15
*	D	US-20120317038-A1	12-2012	Erbey; William C.	H04M3/5183	705/304
*	E	US-20180165691-A1	06-2018	Heater; John Dolan	G06Q30/016	1/1
*	F	US-20100158236-A1	06-2010	Chang; Yi	H04M3/5175	379/265.03
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Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM			DATE							
Final	Original	07/21/2019								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
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	20	✓								

<i>Search Notes</i> 	Application/Control No. 16/274,170	Applicant(s)/Patent Under Reexamination Carpenter et al.
	Examiner JAKIEDA R JACKSON	Art Unit 2657

CPC - Searched*		
Symbol	Date	Examiner
G06F 3/167, 16/3329, 17/2785	07/21/2019	JJ
G10L 15/26	07/21/2019	JJ
G06Q 20/20, 30/60	07/21/2019	JJ

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

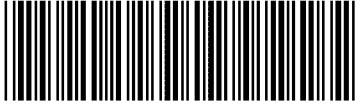
US Classification - Searched*			
Class	Subclass	Date	Examiner
704	270,275	07/21/2019	JJ
705	15, 16	07/21/2019	JJ

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
EAST Search History	07/21/2019	JJ
Reviewed for 101	07/21/2019	JJ
Reviewed for DP	07/21/2019	JJ
Inventor Search	07/21/2019	JJ

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	1	"10013980".pn.	USPAT	OR	OFF	2019/07/21 21:07
L4	0	"20100158236".did.	USPAT	OR	OFF	2019/07/21 21:11
L5	0	"20100158236".pn.	USPAT	OR	OFF	2019/07/21 21:11
L6	1	"20100158236".did.	US-PGPUB; USPAT	OR	OFF	2019/07/21 21:11
L7	0	"20180165691.did",	US-PGPUB; USPAT	OR	OFF	2019/07/21 21:19
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S4	1865	order\$4 and (STT or (speech\$4to\$4text\$4) or transcri\$9) and (IVR or (interactiv\$4 near2 virtual\$4) or avatar\$4 or (artificial\$4 near2 intelligen\$6)) and ((fast\$4 near2 food\$4) or (restaurant\$4))	US-PGPUB; USPAT	OR	OFF	2019/07/14 09:08
S5	64	S2 not S3	US-PGPUB; USPAT	OR	OFF	2019/07/14 09:08
S6	614	order\$4 near4 (food\$4 good\$4 servic\$4 cloth\$4) and (STT or (speech\$4to\$4text\$4) or transcri\$9) and (IVR or (interactiv\$4 near2 virtual\$4) or avatar\$4 or (artificial\$4 near2 intelligen\$6)) and ((fast\$4 near2 food\$4) or (restaurant\$4))	US-PGPUB; USPAT	OR	OFF	2019/07/14 09:13
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S16	4	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and (ton\$4 inflection\$4 emotion\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:29
S17	0	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and (DNN or (deep\$4 near2 neural\$4))	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:32
S18	1	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and (warn\$6 alert\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:33
S19	6	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and (bas\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:36
S20	0	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and (bas\$4) near2 station\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:36
S21	1	"20190171711".did.	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:37
S22	1	"20190171711".did. and strength\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:37
S23	1	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and strength\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:38

S24	6	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and customer\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:39
S25	5	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and pay\$6	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:42
S26	5	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and real\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:43
S27	7	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and (suggest\$8 recommend\$9 option\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:46
S28	1	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and ((tak\$4 near2 control\$4) or audit\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:53
S29	0	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and soda\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:57
S30	2	((("10013980" "7526466" "5991739" "7110963").pn. or ("20030018531" "20050125293" "20130232017").did.) and coke\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 16:57
S31	9543	customer\$4 near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9)	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:03
S32	1	customer\$4 near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9) and costumer\$4 near2 servic\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:04
S33	8810	(user\$4 customer\$4) near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9) and (user\$4 costumer\$4) near2 servic\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:04
S34	79	(user\$4 customer\$4) near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9) and (user\$4 costumer\$4) near2 servic\$4 and (compar\$4 match\$4) near3 script\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:05
S35	41	(user\$4 customer\$4) near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9) and (user\$4 costumer\$4) near2 servic\$4 and (compar\$4 match\$4) near3 script\$4 and ((tak\$4 pass\$4) near2 control\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:06
S36	41	(user\$4 customer\$4) near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9) and (user\$4 costumer\$4) near2 servic\$4 and (compar\$4 match\$4) near3 script\$4 and ((tak\$4 pass\$4) near2 control\$4) and (call\$4 customer\$4) near2 (center\$4 servic\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:08
S37	9	(transcri\$9 STT or (speech\$4to\$4text\$4)) same crowd\$4sourc\$4 and order\$4 with (goods\$4 services\$4 products\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:19
S38	18	order\$4 with (goods\$4 services\$4 products\$4) and metadata\$4 near2 tag\$2 same (tone\$4 inflection\$4 emotion\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:27

S39	2	order\$4 with (goods\$4 services\$4 products\$4) and metadata\$4 near2 tag\$2 same (tone\$4 inflection\$4 emotion\$4) same (transcri\$9 STT or (speech\$4to\$4text\$4))	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:27
S40	121	order\$4 with (goods\$4 services\$4 products\$4) and (transcri\$9 STT or (speech\$4to\$4text\$4)) and (DNN\$4 or (deep\$4 near2 neural\$4 near2 network\$4))	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:37
S41	12	order\$4 with (goods\$4 services\$4 products\$4).ab,bsum,ti. and (transcri\$9 STT or (speech\$4to\$4text\$4)) and (DNN\$4 or (deep\$4 near2 neural\$4 near2 network\$4))	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:38
S42	96	order\$4 with (goods\$4 services\$4 products\$4).ab,bsum,ti. and (DNN\$4 or (deep\$4 near2 neural\$4 near2 network\$4))	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:40
S43	84	S42 not S41	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:40
S44	22	order\$4 near2 (goods\$4 services\$4 products\$4).ab,bsum,ti. and (DNN\$4 or (deep\$4 near2 neural\$4 near2 network\$4))	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:41
S45	144	order\$4 with (goods\$4 services\$4 products\$4).ab,bsum,ti. and (transcri\$9 STT or (speech\$4to\$4text\$4)) and (defin\$6 meaning\$4) near2 (word\$4 phras\$4 utteranc\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:47
S46	23	order\$4 with (goods\$4 services\$4 products\$4).ab,bsum,ti. and (transcri\$9 STT or (speech\$4to\$4text\$4)) and (defin\$6 meaning\$4) near2 (word\$4 phras\$4 utteranc\$4) same natural\$4 near2 languag\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:47
S47	1	order\$4 near4 (food\$4 good\$4 servic\$4 cloth\$4).ab,bsum. and (STT or (speech\$4to\$4text\$4) or transcri\$9) and (decreas\$6 less\$5) near3 strength\$6 near3 audio\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:58
S48	1	order\$4 near4 (food\$4 good\$4 servic\$4 cloth\$4) and (STT or (speech\$4to\$4text\$4) or transcri\$9) and (decreas\$6 less\$5) near3 strength\$6 near3 audio\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:59
S49	2	(STT or (speech\$4to\$4text\$4) or transcri\$9) and (decreas\$6 less\$5) near3 strength\$6 near3 audio\$4	US-PGPUB; USPAT	OR	OFF	2019/07/21 17:59
S50	6539	(user\$4 customer\$4) near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9) and (user\$4 costumer\$4) near2 servic\$4 and (((tak\$4 pass\$4) near2 control\$4) or rout\$4 or overrid\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 18:03
S51	38	(user\$4 customer\$4) near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9) and (user\$4 costumer\$4) near2 servic\$4 and (((tak\$4 pass\$4) near2 control\$4) or rout\$4 or overrid\$4) and (updat\$4 modif\$9 edit\$4) near2 order\$4 same review\$5	US-PGPUB; USPAT	OR	OFF	2019/07/21 18:04
S52	51	(user\$4 customer\$4) near3 (upset\$4 angry\$4 confus\$5 dis\$2satisf\$9) and (user\$4 costumer\$4) near2 servic\$4 and (compar\$4 match\$4) near2 script\$6	US-PGPUB; USPAT	OR	OFF	2019/07/21 18:12
S53	571	order\$4 with (goods\$4 services\$4	US-	OR	OFF	2019/07/21

		products\$4).ab,bsum,ti. and overrid\$6 near2 (system\$4 devic\$4)	PGPUB; USPAT			18:20
S54	3	order\$4 with (goods\$4 services\$4 products\$4).ab,bsum,ti. and (manager\$4 supervisor\$6) near3 overrid\$6 near2 (system\$4 devic\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 18:21
S55	5976	(help\$5 assistan\$6) with (human\$4 agent\$4 manager\$6 supervisor\$4 representativ\$4) and (agent\$4) and (IVR or (interactiv\$4 near2 voic\$4) or (avatar))	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:25
S56	1755	(help\$5 assistan\$6) with (human\$4 agent\$4 manager\$6 supervisor\$4 representativ\$4 agent\$4) same (IVR or (interactiv\$4 near2 voic\$4) or (avatar))	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:26
S57	90	(help\$5 assistan\$6) with (human\$4 agent\$4 manager\$6 supervisor\$4 representativ\$4 agent\$4) near4 (control\$4 overrid\$4 route\$5) same (IVR or (interactiv\$4 near2 voic\$4) or (avatar))	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:26
S58	57	(help\$5 assistan\$6) with (human\$4 agent\$4 manager\$6 supervisor\$4 representativ\$4 agent\$4) near4 (control\$4 overrid\$4 route\$5) same (IVR or (interactiv\$4 near2 voic\$4) or (avatar)) and (compar\$6 match\$5)	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:35
S59	3	(help\$5 assistan\$6) with (human\$4 agent\$4 manager\$6 supervisor\$4 representativ\$4 agent\$4) near4 (control\$4 overrid\$4 route\$5) same (IVR or (interactiv\$4 near2 voic\$4) or (avatar)) and (compar\$6 match\$5) near2 (script\$8 order\$4)	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:35
S60	0	(human\$4 agent\$4 manager\$6 supervisor\$4 representativ\$4 agent\$4) near4 (control\$4 overrid\$4 route\$5) same (IVR or (interactiv\$4 near2 voic\$4) or (avatar)) and (compar\$6 match\$5) near2 (script\$8 order\$4) with updat\$6	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:36
S61	12	(human\$4 agent\$4 manager\$6 supervisor\$4 representativ\$4 agent\$4) same (IVR or (interactiv\$4 near2 voic\$4) or (avatar)) and (compar\$6 match\$5) near2 (script\$8 order\$4) with updat\$6	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:37
S62	2452	(compar\$6 match\$5) near2 (script\$8 order\$4) with updat\$6	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:38
S63	34	(compar\$6 match\$5) near2 (script\$8 order\$4) with updat\$6 and (human\$4 agent\$4 manager\$6 supervisor\$4 representativ\$4 agent\$4) and (IVR or (interactiv\$4 near2 voic\$4) or (avatar))	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:38
S64	22	S63 not S61	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:39
S65	70	(compar\$6 match\$5) near2 (script\$8) with updat\$6	US-PGPUB; USPAT	OR	OFF	2019/07/21 19:40

Bibliographic Data

Application No: 16/274,170

Foreign Priority claimed: ☐ Yes ☒ No

35 USC 119 (a-d) conditions met: ☐ Yes ☒ No ☐ Met After Allowance

Verified and Acknowledged: /JAKIEDA R JACKSON/

Examiner's Signature

Initials

Title: ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
02/12/2019	704	2657	1397-4-NP
RULE			

APPLICANTS

Valyant AI, Inc., Denver, CO, UNITED STATES

INVENTORS

Robley Carpenter II, Denver, CO, UNITED STATES

Jacob Poore Loveland, CO, UNITED STATES

Benjamin Thielker Denver, CO, UNITED STATES

CONTINUING DATA

This application has PRO of 62633240 02/21/2018

This application is a CON of 15723573 10/03/2017

15723573 has PRO of 62478454 03/29/2017

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

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STATE OR COUNTRY

UNITED STATES

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Rocky Mountain Patent LLC

1800 Wazee St., Suite 300

Denver, CO 80202

UNITED STATES

FILING FEE RECEIVED

\$2,000

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16/274,170
	Filing Date		2019-02-12
	First Named Inventor	Robley Theron Carpenter III	
	Art Unit	2657	
	Examiner Name	Jakieda Jackson	
	Attorney Docket Number	1397-4-NP	

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	2	7526466	B2	2009-04-28	Au	Entire Document		
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	1	105894405	CN	A	2016-08-24	Li et al.	Entire Document	×
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		2019-02-12
First Named Inventor	Robley Theron Carpenter III	
Art Unit		
Examiner Name		
Attorney Docket Number	1397-4-NP	

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		

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EXAMINER SIGNATURE

Examiner Signature	/JAKIEDA R JACKSON/	Date Considered	07/21/2019
--------------------	---------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	2019-02-12
First Named Inventor	Robley Theron Carpenter III
Art Unit	
Examiner Name	
Attorney Docket Number	1397-4-NP

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/JRS/	Date (YYYY-MM-DD)	2019-02-12
Name/Print	Jeffrey R. Schell	Registration Number	71,546

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/274,170	02/12/2019	Robley Carpenter II	1397-4-NP

CONFIRMATION NO. 4761

PUBLICATION NOTICE



OC000000108727261

120775
Rocky Mountain Patent LLC
1800 Wazee St., Suite 300
Denver, CO 80202

Title:ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM

Publication No.US-2019-0171711-A1

Publication Date:06/06/2019

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <https://portal.uspto.gov/pair/PublicPair>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/274,170	02/12/2019	Robley Carpenter II	1397-4-NP	4761
120775	7590	06/06/2019	EXAMINER	
Rocky Mountain Patent LLC 1800 Wazee St., Suite 300 Denver, CO 80202				
			ART UNIT	PAPER NUMBER
			2657	
			NOTIFICATION DATE	DELIVERY MODE
			06/06/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@dockettrak.com
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Doc Code: TRACK1.GRANT

**Decision Granting Request for
Prioritized Examination
(Track I or After RCE)**

Application No.: 16/274,170

The original Track 1 Request, filed February 12, 2019, is hereby accepted, within the meaning of 35 U.S.C. 26, in view of the properly executed Track 1 Request subsequently filed on June 3, 2019.

1. THE REQUEST FILED February 12, 2019 IS **GRANTED**.

The above-identified application has met the requirements for prioritized examination

- A. ☒ for an original nonprovisional application (Track I).
B. ☐ for an application undergoing continued examination (RCE).

2. **The above-identified application will undergo prioritized examination.** The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:

- A. filing a **petition for extension of time** to extend the time period for filing a reply;
B. filing an **amendment to amend the application to contain more than four independent claims, more than thirty total claims**, or a multiple dependent claim;
C. filing a **request for continued examination**;
D. filing a notice of appeal;
E. filing a request for suspension of action;
F. mailing of a notice of allowance;
G. mailing of a final Office action;
H. completion of examination as defined in 37 CFR 41.102; or
I. abandonment of the application.

Telephone inquiries with regard to this decision should be directed to Brian W. Brown at 571-272-5338.

/Brian W. Brown/
[Signature]

Petitions Examiner, Office of Petitions
(Title)

**CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION
UNDER 37 CFR 1.102(e) (Page 1 of 1)**

First Named Inventor:	Robley Carpenter, II	Nonprovisional Application Number (if known):	16/274,170
Title of Invention:	Artificially Intelligent Order Processing System		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

- The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in 37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met because that fee, set forth in 37 CFR 1.18(d), is currently \$0. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.
- I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims, and that any request for an extension of time will cause an outstanding Track I request to be dismissed.
- The applicable box is checked below:

I. ☒ Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)

- (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.
---OR---
- (b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.
- An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, or the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.

II. ☐ Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)

- A request for continued examination has been filed with, or prior to, this form.
- If the application is a utility application, this certification and request is being filed via EFS-Web.
- The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
- This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
- No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature	/Jeffrey R. Schell/	Date	2019-06-03
Name (Print/Typed)	Jeffrey R. Schell	Practitioner Registration Number	71,546
Note: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required.*			
☐ *Total of <u>1</u> forms are submitted.			

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Robley Carpenter, II, Jacob Poore and Benjamin Thielker

Application No.: 16/274,170

Filed: 02/12/2019

For: ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM

CERTIFICATE OF EFS SUBMISSION (CEFS)(37 C.F.R. § 1.8(a)(i)(1)(C))

I hereby certify that on June 3, 2019 the following correspondence:

Name of Paper: Corrected Certification and Request for Prioritized Examination and Transmittal

Number of Pages: 3

Fees: None

is being submitted to the Patent and Trademark Office via the Office Electronic Filing System in accordance with § 1.6(a)(4) at _____ local time.


Signature

Telephone Number: 405-553-2828

Diana C. Anderson
Type or print name of person certifying

Filed Electronically on June 3, 2019

PATENT
Dkt. 1397-4-NP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **Robley Carpenter, II, Jacob Poore and Benjamin Thielker**
Assignee: **VALYANT AI, INC.**
Application No.: **16/274,170** Group No.: **2657**
Filed: **February 12, 2019** Examiner:
For: **ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

ATTN: Bryan Brown, Office of Petitions

**CORRECTION OF DEFECTIVELY EXECUTED CERTIFICATION AND REQUEST FOR
PRIORITIZED EXAMINATION UNDER 35 USC §26**

Sir:

Filed herewith is a fully executed Form PTO/SB/424 Certification and Request for Prioritized Examination Under 37 CFR 1.102(e) correcting a defective execution in the originally filed Track I application.

We thank Examiner Bryan Brown in the Office of Petitions for his voicemail message on May 31, 2019, advising us of the error in this Track I filing and the opportunity to file a Correction of Defective Execution Under 35 USC 26. We apologize to the Examiner for any inconvenience.

We do not believe there are any fees due at this time. However, if an additional fee is required, please consider this your authorization to charge Account No. 506295.

Respectfully submitted,

Date: June 3, 2019

/Jeffrey R. Schell/
Jeffrey R. Schell, Registration No. 71,546
Tyler J. Mantooth, Registration No. 60,162
Rocky Mountain Patent LLC
1800 Wazee Street, Suite 300
Denver, CO 80202
jschell@rockymountainpatent.com
888-461-4443
Customer No. 120775

Electronic Acknowledgement Receipt

EFS ID:	36183347
Application Number:	16274170
International Application Number:	
Confirmation Number:	4761
Title of Invention:	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM
First Named Inventor/Applicant Name:	Robley Carpenter
Customer Number:	120775
Filer:	Tyler Joseph Mantooth/Diana Anderson
Filer Authorized By:	Tyler Joseph Mantooth
Attorney Docket Number:	1397-4-NP
Receipt Date:	03-JUN-2019
Filing Date:	12-FEB-2019
Time Stamp:	14:59:31
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		2019-06-03-CorrectedPrioritizedRequest.pdf	181934	yes	3
			6366502f0040e90bd91a2cada3e3c9de31194d65		

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	TrackOne Request	3	3
	Miscellaneous Incoming Letter	1	2
Warnings:			
Information:			
Total Files Size (in bytes):		181934	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.			



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/274,170	02/12/2019	Robley Carpenter II	1397-4-NP	4761
120775	7590	05/23/2019	EXAMINER	
Rocky Mountain Patent LLC 1800 Wazee St., Suite 300 Denver, CO 80202			ART UNIT	PAPER NUMBER
			2657	
			NOTIFICATION DATE	DELIVERY MODE
			05/23/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

kbennett@rockymountainpatent.com
patents@rockymountainpatent.com
USPTO@dockettrak.com



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Rocky Mountain Patent LLC
1800 Wazee St., Suite 300
Denver CO 80202

In re Application of:

CARPENTER, ROBLEY II et al

Serial No.: 16/274,170

Filed: February 12, 2019

Title: **ARTIFICIALLY INTELLIGENT ORDER
PROCESSING SYSTEM**

:
: DECISION ON PETITION TO
: MAKE SPECIAL FOR NEW
: APPLICATION UNDER 37
: C.F.R. § 1.102 & M.P.E.P. §
: 708.02
:

This is a decision on the petition filed on February 12, 2019 to make the above-identified application special for accelerated examination procedure under 37 C.F.R. § 1.102(d).

The petition to make the application special is **DENIED**.

REGULATION AND PRACTICE

To be eligible for accelerated examination under 37 C.F.R. § 1.102(d) and pursuant to the “Change to Practice for Petitions in Patent Applications to Make Special and for Accelerated Examination” published in the Federal Register on June 26, 2006 (71 Fed. Reg. 36323), the following conditions must be satisfied:

1. The application must be a non-reissue utility or design application filed under 37 CFR 1.111(a);
2. The application, the petition and the required fees must be filed electronically using the USPTO’s electronic filing system (EFS), or EFS-web; if not filed electronically, a statement asserting that EFS and EFS-web were not available during the normal business hours;
3. The application, at the time of filing, must be complete under 37 CFR 1.51 and in condition for examination;
4. The application must contain three or fewer independent claims and twenty or fewer total claims and the claims must be directed to a single invention.

The application as filed is not eligible for accelerated examination under 37 C.F.R. § 1.102(d) because the required petition fee or a statement that the claimed subject matter is directed to environmental quality, energy, or countering terrorism was not filed.

Therefore, the petition is denied because the required petition fee was not filed as per item 2 above. It is noted that a Track I Prioritized Examination request was also filed. Application is still being considered for Track I request.

Any inquiry regarding this decision should be directed to Michael Horabik, Quality Assurance Specialist, at (571) 272-3068.

/Michael Horabik/

Michael Horabik
Quality Assurance Specialist
Technology Center 2600
Communications



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/274,170	02/12/2019	Robley Carpenter II	1397-4-NP

120775
Rocky Mountain Patent LLC
1800 Wazee St., Suite 300
Denver, CO 80202

CONFIRMATION NO. 4761
POA ACCEPTANCE LETTER



Date Mailed: 04/16/2019

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/11/2019.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/mtklemichael/

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date
16/274,170	2/12/2019

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

120775

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☒ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name

Address

City

State

Zip

Country

Telephone

Email

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Valyant AI, Inc.

- ☐ Inventor or Joint Inventor (title not required below)
- ☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- ☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature

Rob Carpenter

Date (Optional)

Name

Robley Carpenter II

Title

CEO

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	35694692
Application Number:	16274170
International Application Number:	
Confirmation Number:	4761
Title of Invention:	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM
First Named Inventor/Applicant Name:	Robley Carpenter
Customer Number:	120775
Filer:	Jeffrey R. Schell/Kristin Bennett
Filer Authorized By:	Jeffrey R. Schell
Attorney Docket Number:	1397-4-NP
Receipt Date:	11-APR-2019
Filing Date:	12-FEB-2019
Time Stamp:	11:32:40
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Assignee showing of ownership per 37 CFR 3.73	2019-04-11_1397-4-NP_Assignee_Showing_Ownership_JRS.pdf	118271 01120fd55fcb0ed43d5181c850e2eeae312e6ecf	no	3

Warnings:

Information:					
2	Power of Attorney	2019-04-11_1397-2-NP_POA_SIGNED.pdf	957891	no	1
			5689d28e36254f2e71eae65e3bffe3bddf9b0328		
Warnings:					
Information:					
Total Files Size (in bytes):				1076162	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)Applicant/Patent Owner: Valyant AI, Inc.Application No./Patent No.: 16/274,170Filed/Issue Date: February 12, 2019Titled: ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEMValyant AI, Inc., a Corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose one of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose one of options A or B below):

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 048645, Frame 0139, or for which a copy thereof is attached.
- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:
1. From: _____ To: _____
- The document was recorded in the United States Patent and Trademark Office at
- Reel _____, Frame _____, or for which a copy thereof is attached.
2. From: _____ To: _____
- The document was recorded in the United States Patent and Trademark Office at
- Reel _____, Frame _____, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/JRS/

Signature

Jeffrey R. Schell

Printed or Typed Name

April 11, 2019

Date

71,546

Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/274,170	02/12/2019	Robley Carpenter II	1397-4-NP

120775
Rocky Mountain Patent LLC
1800 Wazee St., Suite 300
Denver, CO 80202

CONFIRMATION NO. 4761
IMPROPER CPOA LETTER



Date Mailed: 04/03/2019

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the power of attorney filed 03/27/2019. The power of attorney in this application is not accepted for the reason(s) listed below:

- The power of attorney has not been accepted because the party who is giving power has not been identified. Power of attorney may only be signed by the applicant for patent (37 CFR 1.42) or the patent owner. A party who is not the applicant must become the applicant in accordance with 37 CFR 1.46(c) and appoint any power of attorney in compliance with 37 CFR 3.71 and 3.73. For a reissue application, reexamination proceeding, or supplemental examination proceeding, a patent owner who was not the applicant under 37 CFR 1.46 must appoint any power of attorney in compliance with 37 CFR 3.71 and 3.73. See 37 CFR 1.32(b)(4).

/ttran/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
16/274,170	02/12/2019	2657	785	1397-4-NP	20	3

120775
Rocky Mountain Patent LLC
1800 Wazee St., Suite 300
Denver, CO 80202

CONFIRMATION NO. 4761
UPDATED FILING RECEIPT



Date Mailed: 04/03/2019

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Robley Carpenter II, Denver, CO;
Jacob Poore, Loveland, CO;
Benjamin Thielker, Denver, CO;

Applicant(s)

Valyant AI, Inc., Denver, CO;

Assignment For Published Patent Application

Valyant AI, Inc., Denver, CO

Power of Attorney: None

Domestic Priority data as claimed by applicant

This appln claims benefit of 62/633,240 02/21/2018
and is a CON of 15/723,573 10/03/2017
which claims benefit of 62/478,454 03/29/2017

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

Projected Publication Date: 06/06/2019

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM

Preliminary Class

704

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/274,170	02/12/2019	Robley Carpenter II	1397-4-NP

CONFIRMATION NO. 4761

120775
Rocky Mountain Patent LLC
1800 Wazee St., Suite 300
Denver, CO 80202

37 CFR 1.48(f)
ACKNOWLEDGEMENT LETTER



OC000000107023724

Date Mailed: 04/03/2019

NOTICE OF ACCEPTANCE OF REQUEST UNDER 37 CFR 1.48(f)

This is in response to the applicant's request under 37 CFR 1.48(f) submitted on 03/27/2019.

The request under 37 CFR 1.48(f) to correct the inventorship, to correct or update the name of an inventor, or to correct the order of names of joint inventors is accepted.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/ttran/

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date
15/723,573	10/3/2017

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

OR

120775

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☒ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name

Address

City

State

Zip

Country

Telephone

Email

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

VALYANT AI, LLC.

- ☐ Inventor or Joint Inventor (title not required below)
- ☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- ☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature *Rob Carpenter*
Name Robley Theron Carpenter
Title CEO

Date (Optional)

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Patent Application Fee Transmittal

Application Number:	16274170			
Filing Date:	12-Feb-2019			
Title of Invention:	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM			
First Named Inventor/Applicant Name:	Robley Theron Carpenter			
Filer:	Jeffrey R. Schell/Kristin Bennett			
Attorney Docket Number:	1397-4-NP			
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
PROCESSING FEE, EXCEPT PROV. APPLS.	2830	1	70	70
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				70

Electronic Acknowledgement Receipt

EFS ID:	35541382
Application Number:	16274170
International Application Number:	
Confirmation Number:	4761
Title of Invention:	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM
First Named Inventor/Applicant Name:	Robley Theron Carpenter
Customer Number:	120775
Filer:	Jeffrey R. Schell/Kristin Bennett
Filer Authorized By:	Jeffrey R. Schell
Attorney Docket Number:	1397-4-NP
Receipt Date:	27-MAR-2019
Filing Date:	12-FEB-2019
Time Stamp:	11:26:23
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	EFT
Payment was successfully received in RAM	\$ 70
RAM confirmation Number	032719INTEFSW11270600
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Assignee showing of ownership per 37 CFR 3.73	2019-03-27_1397-4-NP_Assignee_Showing_Ownership_JRS.pdf	118274	no	3
			4daf6ffcc853edbffdc7f1c528a685829c8756a		
Warnings:					
Information:					
2	Request for Corrected Filing Receipt	2019-03-07_1397-4-NP_Corrected_OFR.pdf	2431099	no	3
			f6cdc3a69ef798223773cfeeda7727d669a6bd3e		
Warnings:					
Information:					
3	Application Data Sheet	2019-03-07_1397-4-NP_Corrected_ADS.pdf	5557128	no	9
			a59ed3e69a763b93c074160b40c8cbdacb9c79f4		
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
4	Oath or Declaration filed	2019-02-11_1397-4-NP_Declaration_BT_SIGNED.pdf	868369	no	1
			5b1b00c95f487369a4454e1dd3d6a9dfa5466065		
Warnings:					
Information:					
5	Oath or Declaration filed	2019-02-11_1397-4-NP_Declaration_JP_SIGNED.pdf	869206	no	1
			818c34faf609afbccc422c9934e6c7df9fd0acb5		
Warnings:					
Information:					
6	Oath or Declaration filed	2019-02-11_1397-4-NP_Declaration_RC_SIGNED.pdf	871633	no	1
			efd28ce421ed7befa1aa1143bb37073b4c37fe0e		
Warnings:					

Information:					
7	Request for Corrected Filing Receipt	2019-03-27_1397-4- NP_Request_for_Corrected_OF R_2.pdf	676404 f3541266a927ed279115a41ac0e68e80f011 bcca	no	2
Warnings:					
Information:					
8	Request for Corrected Filing Receipt	2019-03-27_1397-4- NP_Petition_to_Correct_Invent orship_JRS_2.pdf	2100986 736e8823de092b5a4ed7f63c44bc9cf10f1a 1a6f	no	3
Warnings:					
Information:					
9	Power of Attorney	2019-02-07_1397-2- NP_POA_SIGNED.pdf	951611 005e8048e53f9c29c6c48bc44b9075e48 5a9b	no	1
Warnings:					
Information:					
10	Fee Worksheet (SB06)	fee-info.pdf	30587 429a6f32da6c661d3338d88bf6a0f0818570 32aa	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			14475297		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)Applicant/Patent Owner: Valyant AI, Inc.Application No./Patent No.: 16/274,170Filed/Issue Date: February 12, 2019Titled: ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEMValyant AI, Inc., a Corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 048645, Frame 0139, or for which a copy thereof is attached.
- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:
1. From: _____ To: _____
- The document was recorded in the United States Patent and Trademark Office at
- Reel _____, Frame _____, or for which a copy thereof is attached.
2. From: _____ To: _____
- The document was recorded in the United States Patent and Trademark Office at
- Reel _____, Frame _____, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/JRS/

Signature

Jeffrey R. Schell

Printed or Typed Name

March 26, 2019

Date

71,546

Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**REQUEST FOR CORRECTION IN A
PATENT APPLICATION RELATING TO
INVENTORSHIP OR AN INVENTOR
NAME, OR ORDER OF NAMES, OTHER
THAN IN A REISSUE APPLICATION (37
CFR 1.48)**

Application Number	16/274,170
Filing Date	2019-02-12
First Named Inventor	Robley Carpenter II
Art Unit	2657
Examiner Name	
Practitioner Docket Number	1397-4-NP

**To: Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**

Applicant hereby requests that the inventorship be corrected or changed, or that the name of the inventor or a joint inventor, or the order of the names of joint inventors, be changed, in the above-identified application. **Note:** 37 CFR 1.48 applies to any request to correct inventorship filed on or after September 16, 2012, regardless of the application filing date. **Do not submit this form after payment of the issue fee or if the application has been patented.** See 37 CFR 1.324 for correction of inventorship in a patent.

Please check the applicable box(es) below.

For a nonprovisional application:

- ☒ 1. This request is to correct or change the inventorship in a **nonprovisional** application (**under 37 CFR 1.48(a)**) and includes:
- ☒ An application data sheet (ADS) in accordance with 37 CFR 1.76(c) with the corrected or updated information shown with markings (e.g., underlining for insertions, strikethrough for deletions). See the Manual of Patent Examining Procedure (MPEP) section 601.05(a) for information about filing an ADS in an application filed on/after September 16, 2012. For information about filing a Supplemental ADS in an application filed before September 16, 2012, see MPEP 601.05(b).
- ☒ The processing fee set forth in 37 CFR 1.17(i). \$ **70.00**
- ☒ An inventor is being added. An inventor's oath or declaration by any actual inventor who has not yet executed an oath or declaration is required (see 37 CFR 1.48(b)). See MPEP 602.01(a) for information about an inventor's oath or declaration for an application filed on/after September 16, 2012 (e.g., form **PTO/AIA/01**). For information about an inventor's oath or declaration for an application filed before September 16, 2012 (e.g., form **PTO/SB/01**), see MPEP 602.01(b).
- ☐ This request is being filed after the first Office action on the merits has been given or mailed (see 37 CFR 1.48(c) and 1.17(d)). Check one of the following:
- ☐ This request to correct or change the inventorship is due solely to the cancellation of claims in the application.
- OR
- ☐ The fee set forth in 37 CFR 1.17(d) is due (**in addition** to the fee set forth in 37 CFR 1.17(i)). \$ _____

[Page 1 of 2]

This collection of information is required by 37 CFR 1.48. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

if you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

REQUEST FOR CORRECTION IN A PATENT APPLICATION RELATING TO INVENTORSHIP OR AN INVENTOR NAME, OR ORDER OF NAMES, OTHER THAN IN A REISSUE APPLICATION (37 CFR 1.48)

- ☐ 2. This request is to correct or update the name of the inventor or a joint inventor, or the order of names of joint inventors, in a **nonprovisional** application (under 37 CFR 1.48(f)) and includes:
- ☐ An application data sheet in accordance with 37 CFR 1.76(c) identifying the complete inventive entity, including the corrected or updated name of the inventor, or the new order of names shown with markings (e.g., underlining for insertions, strikethrough for deletions). See the MPEP 601.05(a) for information about filing an ADS in an application filed on/after September 16, 2012. For information about filing a Supplemental ADS in an application filed before September 16, 2012, see MPEP 601.05(b).
- ☐ The processing fee set forth in 37 CFR 1.17(i). \$ _____

For a provisional application:

- ☐ This request is to change or correct the inventorship, or correct or update the name of the inventor or a joint inventor, in a **provisional** application (under 37 CFR 1.48(d)) and includes:
- ☐ **Attached hereto** is a request, signed by a party set forth in 37 CFR 1.33(b), that identifies each inventor by his or her legal name, in the preferred order.
- ☐ The processing fee set forth in 37 CFR 1.17(q). \$ _____

Fee Payment Information:

- ☒ Applicant asserts small entity status. See 37 CFR 1.27.
- ☐ Applicant certifies micro entity status. See 37 CFR 1.29.
Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.
- ☐ A check in the amount of the fee is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 506750.
- ☒ Payment made via EFS-Web.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

- ☐ Applicant* ☒ attorney or agent of record ☐ attorney or agent acting under 37 CFR 1.34
- Registration number 71,546 Registration number _____

Signature /JRS/Typed or printed name Jeffrey R. ScheilDate March 27, 2019

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. *Juristic entities must be represented by a patent practitioner (See 37 CFR 1.31, applicable to any paper filed on or after September 16, 2012 that is presented on behalf of a juristic entity, regardless of application filing date). Submit multiple forms if more than one signature is required, see below**.

☒ ** Total of 1 forms are submitted.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2657
	)	
Robley Carpenter II	)	Confirmation No. 4761
Application Serial No. 16/274,170	)	
	)	Examiner:
Filed: February 12, 2019	)	
	)	<u>REQUEST FOR CORRECTED</u>
Atty. File No. 1397-4-NP	)	<u>FILING RECEIPT</u>
	)	
Entitled: ARTIFICIALLY INTELLIGENT	)	
ORDER PROCESSING SYSTEM	)	<i>Electronically Submitted</i>
	)	
	)	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir,

Applicant notes that the name of the inventor in the Application Data Sheet filed on February 12, 2019 identifies the inventor as "Robley Theron Carpenter III". However, the correct name of the inventor is "Robley Carpenter II". Applicant submits herewith, a new Declaration executed by the inventor with the correct inventor name.

Applicant also submits herewith, a Request to Correct or Change the Inventorship in a nonprovisional application (under 37 CFR 1.48(a)) and includes:

- An application data sheet (ADS) in accordance with 37 CFR 1.76(c) with the corrected or updated information shown with markings;
- An inventor's oath or declaration by any actual inventor who has not yet executed an oath or declaration in accordance with 37 CFR 1.48(b);
- A corrected Official Filing Receipt with updated information shown with markings;
- a power of attorney signed by Applicant (Valyant AI, Inc.) along with a Statement under 37 C.F.R. 3.73 with copies of the executed Assignments) and
- The \$70.00 processing fee set forth in 37 CFR 1.17(i).

Accordingly, Applicant respectfully requests that the Commissioner issue a corrected Filing Receipt reflecting the updated information as provided.

Although Applicant does not believe any additional fees are required, please deduct any required fees from Deposit Account Number 506750.

Respectfully Submitted,

Rocky Mountain Patent, LLC

By: /JRS/
Jeffrey R. Schell
Registration No. 71,546
1800 Wazee St., Suite 300
Denver, CO 80202
(888) 461-4443

Date: March 26, 2019



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
16/274,170	02/12/2019	2658	785	1397-4-NP	20	3

CONFIRMATION NO. 4761

FILING RECEIPT



0000000106245077

120775
Rocky Mountain Patent LLC
1800 Wazee St., Suite 300
Denver, CO 80202

Date Mailed: 03/01/2019

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

~~Robley Theron Carpenter III~~, Denver, CO; II

Applicant(s) Jacob Poore, Loveland, CO Benjamin Thielker, Denver, CO

Valyant AI, Inc., Denver, CO;

Assignment For Published Patent Application

Valyant AI, Inc., Denver, CO

Power of Attorney: None

Domestic Priority data as claimed by applicant

This appln claims benefit of 62/633,240 02/21/2018
and is a CON of 15/723,573 10/03/2017
which claims benefit of 62/478,454 03/29/2017

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 02/28/2019

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/274,170**

Projected Publication Date: 06/06/2019

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM

Preliminary Class

704

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1397-4-NP
		Application Number	16/274,170
Title of Invention	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove				
Legal Name				
Prefix	Given Name	Middle Name	Family Name	Suffix
	Robley	-Theron	Carpenter	III- II
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service				
City	Denver	State/Province	CO	Country of Residence US
Mailing Address of Inventor:				
Address 1		50 S. Steele St. #505		
Address 2				
City	Denver	State/Province	CO	
Postal Code	80209	Country	US	
Inventor 2 Remove				
Legal Name				
Prefix	Given Name	Middle Name	Family Name	Suffix
	Jacob		Poore	
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service				
City	Loveland	State/Province	CO	Country of Residence US
Mailing Address of Inventor:				
Address 1		995 Lepus Drive		
Address 2				
City	Loveland	State/Province	CO	
Postal Code	80537	Country	US	
Inventor 3 Remove				
Legal Name				
Prefix	Given Name	Middle Name	Family Name	Suffix
	Benjamin		Thielker	
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service				

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1397-4-NP		
		Application Number	16/274,170		
Title of Invention	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM				
City	Denver	State/Province	CO	Country of Residence	US
Mailing Address of Inventor:					
Address 1	1776 Broadway				
Address 2	APPT 2406				
City	Denver	State/Province	CO		
Postal Code	80202	Country	US		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.					

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
☐ An Address is being provided for the correspondence Information of this application.			
Customer Number	120775		
Email Address	jschell@rockymountainpatent.com	Add Email	Remove Email
Email Address	kbennett@rockymountainpatent.com	Add Email	Remove Email
Email Address	patents@rockymountainpatent.com		Remove Email

Application Information:

Title of the Invention	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM		
Attorney Docket Number	1397-4-NP	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	6	Suggested Figure for Publication (if any)	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1397-4-NP
		Application Number	<u>16/274,170</u>
Title of Invention	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM		

Publication Information:

☐	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐	Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.			
Please Select One:			
☒	Customer Number	☐	US Patent Practitioner
☐	Limited Recognition (37 CFR 11.9)		
Customer Number	120775		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16274170	Claims benefit of provisional	62633240	2018-02-21
Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16274170	Continuation of	15723573	2017-10-03
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15723573	Claims benefit of provisional	62478454	2017-03-29
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1397-4-NP
		Application Number	16/274,170
Title of Invention	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM		

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)

Remove

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013. NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1397-4-NP
		Application Number	<u>16/274,170</u>
Title of Invention	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1397-4-NP
		Application Number	16/274,170
Title of Invention	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.			
Applicant 1			
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.			
Clear			
☒ Assignee		☐ Legal Representative under 35 U.S.C. 117	
☐ Person to whom the inventor is obligated to assign.		☐ Joint Inventor	
☐ Person who shows sufficient proprietary interest			
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor:			
If the Applicant is an Organization check here. ☒			
Organization Name	Valyant AI, Inc.		
Mailing Address Information For Applicant:			
Address 1	50 S. Steele St. #505		
Address 2			
City	Denver	State/Province	CO
Country	US	Postal Code	80209
Phone Number	(303) 358-6128	Fax Number	
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button.			

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1397-4-NP
		Application Number	<u>16/274,170</u>
Title of Invention	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM		

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

If the Assignee or Non-Applicant Assignee is an Organization check here. ☒

Organization Name Valyant AI, Inc.

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1		50 S. Steele St. #505	
Address 2			
City	Denver	State/Province	CO
Country ⁱ	US	Postal Code	80209
Phone Number	(303) 358-6128	Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). However, if this Application Data Sheet is submitted with the **INITIAL** filing of the application and either box A or B is **not** checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/JRS/	Date (YYYY-MM-DD)	2019-02-12
First Name	Jeffrey R.	Last Name	Schell
Registration Number		71,546	

Additional Signature may be generated within this form by selecting the Add button.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1397-4-NP
		Application Number	
Title of Invention	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM		

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)**Title of
Invention****ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM**

As the below named inventor, I hereby declare that:

This declaration
is directed to:☐

The attached application, or

☒United States application or PCT international application number 16/274,170
filed on February 12, 2019.

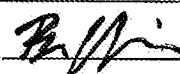
The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTORInventor: Benjamin ThielkerDate (Optional): 2/13/2019Signature: 

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of
Invention

ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM

As the below named inventor, I hereby declare that:

This declaration
is directed to:

☐

The attached application, or

☒

United States application or PCT international application number 16/274,170

filed on February 12, 2019

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

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Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Jacob Poore

Date (Optional) : _____

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Invention

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As the below named inventor, I hereby declare that:

This declaration
is directed to:

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The attached application, or

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United States application or PCT international application number 16/274,170

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The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

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LEGAL NAME OF INVENTOR

Inventor: Robley Carpenter II

Date (Optional): _____

Signature: Robley Carpenter II

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/274,170	02/12/2019	Robley Theron Carpenter III	1397-4-NP

120775
Rocky Mountain Patent LLC
1800 Wazee St., Suite 300
Denver, CO 80202

CONFIRMATION NO. 4761
IMPROPER CFR REQUEST



Date Mailed: 03/01/2019

RESPONSE TO REQUEST FOR CORRECTED FILING RECEIPT

Continuity, Priority Claims, Petitions, and Non-Publication Requests

In response to your request for a corrected Filing Receipt, the Office is unable to comply with your request because:

Improper Benefit Claim(s) to Prior-Filed Provisional Application(s)

The benefit claim(s) to prior-filed provisional application(s) is improper because the instant application was not filed within twelve (12) months from the filing date of the provisional application, and there is no indication of an intermediate nonprovisional or international application designating the United States that is directly claiming the benefit of the provisional application and filed within 12 months of the filing date of the provisional application. Applicant should review each benefit claim submitted and, if appropriate, provide the proper reference to the prior-filed applications (including an indication of any intermediate application that is directly claiming the benefit of the provisional application and filed with 12 months of the filing date of the provisional application) as required by 37 CFR 1.78.

Alternatively, if the instant application (or intermediate application) was filed within 14 months of the prior provisional application, applicant may file a petition (in the instant application or the intermediate application, as appropriate) to restore the benefit of the provisional application if the delay in filing the instant application (or intermediate application) within the 12 month time period was unintentional. See 37 CFR 1.78 for the requirements of a petition to restore the benefit of the provisional application.

For applications filed on or after September 16, 2012, applicant must submit a corrected application data sheet (ADS) to include a specific reference.

Timeliness: The required reference for each benefit claim must be filed during the pendency of the instant application and within the later of: (1) four months from the actual filing date of the instant application, or the national stage commencement date if the instant application is a national stage application under 35 U.S.C. 371; or (2) sixteen months from the filing date of the prior-filed application. Failure to timely file the required reference is considered a waiver of any benefit claim, unless a grantable petition to accept an unintentionally delayed claim under 37 CFR 1.78, the petition fee set forth in 37 CFR 1.17(m), and the required reference are filed.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office

of Data Management, Application Assistance Unit, at
(571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/hnguyen/

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number
16/274,170

APPLICATION AS FILED - PART I

(Column 1)		(Column 2)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	75		N/A	
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	330		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	380		N/A	
TOTAL CLAIMS (37 CFR 1.16(j))	20	minus 20 = *	x 50 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3 = *	x 230 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
			TOTAL	785		TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
16/274,170	02/12/2019	2658	785	1397-4-NP	20	3

CONFIRMATION NO. 4761

FILING RECEIPT

120775
Rocky Mountain Patent LLC
1800 Wazee St., Suite 300
Denver, CO 80202



Date Mailed: 03/01/2019

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Robley Theron Carpenter III, Denver, CO;

Applicant(s)

Valyant AI, Inc., Denver, CO;

Assignment For Published Patent Application

Valyant AI, Inc., Denver, CO

Power of Attorney: None

Domestic Priority data as claimed by applicant

This appln claims benefit of 62/633,240 02/21/2018
and is a CON of 15/723,573 10/03/2017
which claims benefit of 62/478,454 03/29/2017

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 02/28/2019

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/274,170**

Projected Publication Date: 06/06/2019

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM

Preliminary Class

704

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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Electronic Patent Application Fee Transmittal

Application Number:	16274170			
Filing Date:				
Title of Invention:	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM			
First Named Inventor/Applicant Name:	Robley Theron Carpenter			
Filer:	Jeffrey R. Schell/Kristin Bennett			
Attorney Docket Number:	1397-4-NP			
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	75	75
UTILITY SEARCH FEE	2111	1	330	330
UTILITY EXAMINATION FEE	2311	1	380	380
Pages:				
Claims:				
Miscellaneous-Filing:				
PROCESSING FEE, EXCEPT PROV. APPLS.	2830	1	70	70
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				855

Electronic Acknowledgement Receipt

EFS ID:	35132451
Application Number:	16274170
International Application Number:	
Confirmation Number:	4761
Title of Invention:	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM
First Named Inventor/Applicant Name:	Robley Theron Carpenter
Correspondence Address:	Rocky Mountain Patent LLC - 1800 Wazee St., Suite 300 - Denver CO 80202 US 8884614443 jschell@rockymountainpatent.com
Filer:	Jeffrey R. Schell/Kristin Bennett
Filer Authorized By:	Jeffrey R. Schell
Attorney Docket Number:	1397-4-NP
Receipt Date:	12-FEB-2019
Filing Date:	
Time Stamp:	21:08:06
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	EFT
Payment was successfully received in RAM	\$855

RAM confirmation Number	021319INTEFSW21082200
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Fee Worksheet (SB06)	fee-info.pdf	37237	no	2
			8c9fefbc7b6761bc725e04afa4b570e621c5acd5		

Warnings:

Information:

Total Files Size (in bytes):	37237
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2019-02-12
	First Named Inventor	Robley Theron Carpenter III	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	1397-4-NP	

U.S.PATENTS							Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	
	1	10013980	B2	2018-07-03	Borsutsky et al.	Entire Document	
	2	7526466	B2	2009-04-28	Au	Entire Document	
If you wish to add additional U.S. Patent citation information please click the Add button.							Add

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Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	
	1	20030018531	A1	2003-01-23	Mahaffy et al.	Entire Document	
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add

FOREIGN PATENT DOCUMENTS								Remove
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	105894405	CN	A	2016-08-24	Li et al.	Entire Document	×
If you wish to add additional Foreign Patent Document citation information please click the Add button.								Add
NON-PATENT LITERATURE DOCUMENTS								Remove

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	2019-02-12
First Named Inventor	Robley Theron Carpenter III
Art Unit	
Examiner Name	
Attorney Docket Number	1397-4-NP

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	2019-02-12
First Named Inventor	Robley Theron Carpenter III
Art Unit	
Examiner Name	
Attorney Docket Number	1397-4-NP

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/JRS/	Date (YYYY-MM-DD)	2019-02-12
Name/Print	Jeffrey R. Schell	Registration Number	71,546

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Applicant: Valyant AI, LLC
Attorney Docket No.: 1397-4
Serial No.: Not Assigned
For: Artificially Intelligent Order Processing System
Filed: Herewith

Accelerated Examination Support Document

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This accelerated examination support document is provided in support of the petition for accelerated examination filed herewith.

There are twenty claims currently pending in the application. The claims read as follows:

1. A method of training a natural language ordering system comprising the steps of:
providing an audio stream of customer ordering transactions;
slicing the audio stream into short clips;
transcribing the short clips into text using a transcription unit;
adding metadata tags to the transcribed text using the transcription unit;
training a speech-to-text system by populating ~~the system~~ *the artificially intelligent order processing system* with the transcribed text having the metadata tags.
2. The method according to claim 1 wherein the transcription unit is a crowd source platform.
3. The method according to claim 1 wherein the metadata tags provide data regarding tone or inflection that would be lost in a traditional speech-to-text conversion.
4. The method according to claim 1 wherein the speech-to-text system employs a deep neural network.
5. The method according to claim 1 further comprising the steps of:
identifying a word or phrase in the text using the speech-to-text processor; and
providing meaning for the identified word or phrase using a natural language processor.
6. The method according to claim 5 further comprising the step of generating an order with a business processor using the identified word or phrase from the natural language processor.
7. The method according to claim 5 wherein the natural language processor is configured to trigger an alert when a warning condition is encountered.
8. The method according to claim 7 wherein the warning condition is a word or phrase indicative of customer dissatisfaction or confusion.

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9. The method according to claim 1 wherein the audio stream used for text transcription is a stream from a customer accessible microphone to a base station.

10. The method according to claim 9 wherein further comprising the step of decreasing the strength of the audio stream prior to transmission to the transcription unit.

11. A method of speech recognition-based order processing comprising the steps of:
 providing an audio stream of a customer order;
 providing an order processor having a ~~speech recognition module~~ trained using artificial intelligence programs;
 converting a word or words in the audio stream to text using the ~~speech recognition module~~;
 processing the text communication with the ~~speech recognition module~~ to identify a word or words in the text of the converted audio stream according to a previous spoken word training;
 providing a natural language processor having order assembly capabilities and exception detection capabilities, wherein the natural language processor receives recognized text from the order processor and creates or modifies an order based upon the recognized text;
 generating an order with the natural language processor;
 alerting an auditor of detected exceptions in the order; and
 transmitting the order to a business processor, wherein the business processor communicates with a point-of-sale system to collect payment and provide notifications to release the ordered product or service.

12. The method according to claim 11 wherein the order is processed in real time.

13. The method according to claim 11 wherein the business processor receives order information from the NLP and performs the steps of:
 associating the order items with one or more additional menu items or options associated with the order items; and
 querying the customer about the one or more additional menu items or options associated with the order items, wherein the NLP updates the order based upon the customer response to the query.

14. The method according to claim 13 further comprising the steps of:
 providing a text-to-speech processor to convert queries from the business processor into audio to be communicated to a customer; and
 processing the text with the text-to-speech processor to create an audio communication of the query generated by the business processor.

15. The method according to claim 12 wherein the alert to the auditor prompts the auditor to take control of the order processing system.

16. The method according to claim 15 further comprising the steps of reviewing an order by an auditor by comparing the order generated by the natural language processor to the communication in the audio stream and updating the order based upon auditor review.

17. A method of speech recognition-based order processing comprising the steps of:
 providing an audio stream of a customer order to a speech-to text processor;
 providing an order processor ~~incorporating~~ a speech recognition module trained using artificial intelligence programs;
 converting a word or words in the audio stream to text using the speech recognition module;

processing the text communication with the speech recognition module to identify a word or words in the text of the converted audio stream according to a previous spoken word training;
providing a natural language processor having order assembly capabilities and exception detection capabilities, wherein the natural language processor receives recognized text from the order processor and creates or modifies the order based upon the recognized text;
generating an order with the natural language processor;
providing an audio stream of a customer order to an auditor;
providing the generated order to the auditor;
performing a comparison of the audio stream of a customer order with the generated order by the auditor;
updating the order processor based upon errors detected in the order by the auditor; and
transmitting the order to a business processor, wherein the business processor communicates with a point-of-sale system to collect payment and provide notifications to release the ordered product or service.

18. The method according to claim 17 wherein the business processor receives order information from the NLP and performs the steps of:
associating the order items with one or more additional order items or options associated with the order items; and
querying the customer about the one or more additional order items or options associated with the order items, wherein the NLP updates the order based upon the customer response to the query.

19. The method according to claim 17 further comprising the steps of:
providing a text-to-speech processor to convert queries from the business processor into audio to be communicated to a customer; and
processing the text with the text-to-speech processor to create an audio communication of the query generated by the business processor.

20. The method according to claim 17 further comprising the step of alerting the auditor by the NLP of any exceptions detected by ~~the artificially intelligent order processing system~~, wherein the auditor can override ~~the artificially intelligent order processing system~~ based upon the detected exception.

9(A) References Deemed Most Closely Related:

An Information Disclosure Statement in compliance with 37 CFR 1.98 has been filed herewith citing each of the following references deemed most closely related to the subject matter of the claim.

Mahaffy et al	US 20030018531A1
Au	US 7526466B2

9(B) Identification of Limitations Disclosed by References:

Mahaffy et al (US 20030018531A1):

With respect to Claim 1, Mahaffy et al teach a system to facilitate and expedite the ordering and purchase of food items from a restaurant (Background of the Invention, [0003]) comprising:

- a) Providing an audio stream of customer ordering transactions (implied by the AI system which receives said audio signal in Claim 1); and
- b) Transcribing the short clips into text using a transcription unit (implied by processing the audio signal to at least partially recognize the verbal instruction from the customer in Claim 1).

With respect to claim 11, Mahaffy et al teach a system to facilitate and expedite the ordering and purchase of food items from a restaurant (Background of the Invention, [0003]) comprising:

- a) Providing an audio stream of a customer order (“a verbal instruction from the customer,” and “converting the verbal instruction to an audio signal” as implied by claim 1)
- b) Processing the text communication with the speech recognition module to identify a word or words in the text of the converted audio stream according to previous spoken word training (“receives said audio signal and processes said audio signal to at least partially recognize the verbal instruction from the customer” in claim 1); and
- c) Alerting an auditor of detected exceptions in the order (implied by “a human-controlled response system in communication with said first computer system and adapted intervene to interact with the customer when said AI system has not satisfactorily recognized the verbal instruction from the customer” in Claim 1).

With respect to claim 16, Mahaffy et al teach reviewing an order by an auditor by comparing the order generated by the natural language processor to the communication in the audio stream and updating the order based upon auditor review (implied by a “human-controlled response system in communication with said first computer system and adapted intervene to interact with the customer when said AI system has not satisfactorily recognized the verbal instruction from the customer.”)

With respect to claim 17, Mahaffy et al teach a system to facilitate and expedite the ordering and purchase of food items from a restaurant (Background of the Invention, [0003]) comprising:

- a) providing an audio stream of a customer order to a speech-to text processor (“a verbal instruction from the customer,” and “converting the verbal instruction to an audio signal” as implied by claim 1);
- b) converting a word or words in the audio stream to text using the speech recognition module (“a verbal instruction from the customer,” and “converting the verbal instruction to an audio signal” as implied by claim 1);
- c) providing a natural language processor having order assembly capabilities and exception detection capabilities, wherein the natural language processor receives recognized text from the order processor and creates or modifies the order based upon the recognized text (“a human-controlled response system in communication with said first computer system and adapted intervene to interact with the customer when said AI system has not satisfactorily recognized the verbal instruction from the customer” to as implied by claim 1);

Au (US 7526466B2):

With respect to Claim 1, Au teaches a system configured to “disambiguate a contextual meaning of natural language input streams” to “represent a contextual meaning of the input stream” (Summary of the Invention) comprising:

- a) “providing an audio stream of customer ordering transactions” (“receiving a natural language input at the computer system, wherein the natural language input includes one or more words” in Claim 1); and
- b) “transcribing the short clips into text using a transcription unit” (“receiving a natural language input at the computer system, wherein the natural language input includes one or more words” and “analyzing at least one of the one or more words of the natural language input using the rearranged semantic network” in Claim 1).

With respect to Claim 11, Au teaches a system configured to “disambiguate a contextual meaning of natural language input streams” to “represent a contextual meaning of the input stream” (Summary of the Invention) comprising:

- a) “providing an audio stream of a customer order” (“receiving a natural language input at the computer system, wherein the natural language input includes one or more words” in Claim 1);
- b) “converting a word or words in the audio stream to text using the speech recognition module” (“receiving a natural language input at the computer system, wherein the natural language input includes one or more words” and “analyzing at least one of the one or more words of the natural language input using the rearranged semantic network” in Claim 1); and
- c) “processing the text communication with the speech recognition module to identify a word or words in the text of the converted audio stream according to a previous spoken word training” (“receiving a natural language input at the computer system, wherein the natural language input includes one or more words” and “analyzing at least one of the one or more words of the natural language input using the rearranged semantic network” in Claim 1).

With regard to Claim 17, Au teaches a system configured to “disambiguate a contextual meaning of natural language input streams” to “represent a contextual meaning of the input stream” (Summary of the Invention) comprising:

- a) “providing an audio stream of a customer order to a speech-to text processor” (“receiving a natural language input at the computer system, wherein the natural language input includes one or more words” in Claim 1);
- b) “converting a word or words in the audio stream to text using the speech recognition module” (“receiving a natural language input at the computer system, wherein the natural language input includes one or more words” and “analyzing at least one of the one or more words of the natural language input using the rearranged semantic network” in Claim 1); and

- c) “processing the text communication with the speech recognition module to identify a word or words in the text of the converted audio stream according to a previous spoken word training” (“receiving a natural language input at the computer system, wherein the natural language input includes one or more words” and “analyzing at least one of the one or more words of the natural language input using the rearranged semantic network” in Claim 1).

9(C) Detailed Explanation of Patentability:

All of the references identified above fail to at least teach or suggest “adding metadata tags to the transcribed text using a transcription unit” as required in the third clause of Claim 1, “transmitting the order to a business processor, wherein the business processor communicates with a point-of-sale system to collect payment and provide notifications to release the ordered product or service” of Claim 11 and Claim 17. Thus, each claim is seen to patentably distinguish over each of these references alone or in combination. Dependent claims 2-10 have no features that would define over the references deemed most closely related if claim 1 was found to be unpatentable. Dependent claims 12-16 have no features that would define over the references deemed most closely related if claim 11 was found to be unpatentable. Dependent claims 18-20 have no features that would define over the references deemed most closely related if claim 17 was found to be unpatentable.

9(D) Concise Statement of Utility:

The invention as claimed has utility in that it provides for adding metadata tags to transcribed text of an ordering system, and allowing for text derived from speech recognition to collect and transmit orders. The invention as claimed has further utility in that it generates orders as derived from recognized text. The robustness of the methods claimed together with the auditing processes claimed allow for improved learning of contextual text as audited.

9(E) Showing of Support under 35 USC 112, First Paragraph:

Support for the disclosure under 35 USC 112, first paragraph is found in at least Fig. 5, where each element of the flowchart corresponds to the elements of at least Claim 1. In addition to the steps disclosed in the flowchart in Fig. 5 corresponding to the articulated method steps, the elements associated with auditing and natural language processor included in Claim 11 and Claim 17 are disclosed at least in paragraphs [00047]-[00049]. Further, the elements speech recognition module is described in at least paragraphs [0009]-[00010] and [00041].

The sole claim does not invoke 35 USC 112, sixth paragraph. There are no means- (or step-) plus-function claim elements.

9(F) Identification of References Disqualified as Prior Art under 35 USC 103(c):

None of the cited references are disqualified as prior art under 35 USC 103(c).

Respectfully Submitted,

/JRS/

Jeffrey R. Schell, Esq. Reg. No. 71,546
Rocky Mountain Patent, LLC
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Denver, CO 80202
jschell@rockymountainpatent.com
(888) 461-4443

Applicant: Valyant AI, LLC
Attorney Docket No.: 1397-4
Serial No.: Not Assigned
For: Artificially Intelligent Order Processing System
Filed: Herewith

Pre-Examination Search Document

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This pre-examination search statement is provided in support of the petition for accelerated examination filed herewith.

A pre-examination search was conducted involving U.S. patents and patent application publications, foreign patent documents and non-patent literature as indicated below. The results of the search are provided on an Information Disclosure Statement filed concurrently herewith.

8 (A) Pre-examination Search

US Field of Search:

Class(es)/Subclass(es) Searched:
704/246, 275;
706/16, 47, 48, 61.

Date Conducted: February 11, 2019.

Database Searches:

1. Database Service: PatFT
2. L1 ((TTL/(food AND ordering) AND ((CPC/704) or CPC/706))
3. L2 ttl/(ordering) and (CPC/704 or CPC/706)
4. L3 spec/(food and ordering) and (CPC/704 or CPC/706)
5. L4 spec/(food) and (CPC/704 or CPC/706)
6. L5 spec/(order) and (CPC/704 or CPC/706)
7. L6 spec/(drive-thru) and (CPC/704 or CPC/706)
8. L7 spec/("drive" and "thru") and (CPC/704 or CPC/706)
L8 spec/("drive" and "through") and (CPC/704 or CPC/706)

9. Database Service: Google

File Searched: Google Patents

Search Logic: fast food ordering;
Food ordering;
Artificial intelligent food ordering.

Date Conducted: February 11, 2019.

8(B) Search Directed to the Invention

The pre-examination search was directed to the claimed invention, encompassing all the features of the claims and giving the claims their broadest reasonable interpretation.

8(C) Search Directed to the Disclosure

No disclosed features that are unclaimed at this time are currently seen as features that may be claimed later.

8(D) Search Report from a Foreign Patent Office

No search report from a foreign patent office is provided here as the pre-examination search.

8(E) Statement of Good Faith

All statements above in support of the petition to make special are based on a good faith belief that the search was conducted in compliance with the requirements of this rule.

Respectfully Submitted,

/JRS/

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Electronic Patent Application Fee Transmittal

Application Number:				
Filing Date:				
Title of Invention:	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM			
First Named Inventor/Applicant Name:	Robley Theron Carpenter III			
Filer:	Jeffrey R. Schell/Kristin Bennett			
Attorney Docket Number:	1397-4-NP			
Filed as Small Entity				
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Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
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REQUEST FOR PRIORITIZED EXAMINATION	2817	1	2000	2000
Pages:				
Claims:				
Miscellaneous-Filing:				
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Patent-Appeals-and-Interference:				
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Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
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Total in USD (\$)				2000

Electronic Acknowledgement Receipt

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Application Number:	16274170
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Title of Invention:	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM
First Named Inventor/Applicant Name:	Robley Theron Carpenter III
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The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	TrackOne Request	2019-02-11_1397-4-NP_Track_I_Request.pdf	1624883	no	1
			5ac1a6dd98242c72b99db9dbcc2f777f4a6b108		
Warnings:					
Information:					
2	Application Data Sheet	2019-02-11_1397-4-NP_ADS.pdf	1874213	no	8
			47cf1a17d323b892e7bb79304c5ce239e1db92c1		
Warnings:					
Information:					
3		2_12_2019_1397-4_NP_FINAL_JRS.pdf	293048	yes	32
			56bafff100ca411267efcaed2d0025bc060f4e46		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Abstract		32	32	
	Claims		28	31	
	Specification		1	27	
Warnings:					
Information:					
4	Drawings-only black and white line drawings	2_12_2019_1397-4_Figures.pdf	1684009	no	6
			1276d234f5cf0c64d3ab3a53a619bbeccfe1202		
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5	Oath or Declaration filed	2-12-2019_1397-4-NP_Declaration_SIGNED.pdf	1596492	no	2
			11596026b9bc17d6fae2c81f4a47ec8254e7b326		
Warnings:					
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6	Transmittal Letter	2019-02-12_1397-4-NP_IDS_Transmittal.pdf	211087	no	4
			6194d4eee797cbbc806c895d1c373a550ca9883b		
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7	Information Disclosure Statement (IDS) Form (SB08)	2019-02-12_1397-4-NP_SB-08.pdf	1053258	no	4
			20f363c93b29d705eeb11661a5fd33740c7aa4fd		
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8	Miscellaneous Incoming Letter	2_12_2019_1397-4_Accelerated_Examination_Support_Document_JRS_FINAL.pdf	202848	no	7
			a3d8ff2f2448e9feb66ddbdb0b101ed0cd6bb83		
Warnings:					
Information:					
9	Miscellaneous Incoming Letter	2_12_2019_Pre-Exam_Search_Document_JRS_FINAL.pdf	135757	no	3
			aa9419446c2c282cdd693d7e3a4c830dbb95f4b3		
Warnings:					
Information:					
10	Foreign Reference	CN105894405A.pdf	8854809	no	13
			7445547e972b37e42a1863e715b2c6b322b2801f		
Warnings:					
Information:					
11	Foreign Reference	CN105894405A-Translation_2.pdf	9578157	no	18
			475d0966d184bec5a35b3a71fe57fdec4feaea6d		
Warnings:					
Information:					

12	Fee Worksheet (SB06)	fee-info.pdf	30508	no	2
			47b41b257ebf7b853cc7422f20d27488a68d63dc		

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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DESCRIPTION CN105894405

The invention provides an artificial intelligence based ordering interaction system and method, the artificial intelligence based ordering interaction system comprises: a smart ordering robot and a display screen; the smart ordering robot is used for conducting natural language with the user An alternating meal interaction; the display screen is used to display ordering information. The system can better meet the needs of enterprises and users.

Artificial intelligence based ordering interaction system and method

Technical field

The present invention relates to the field of Internet technologies, and in particular, to a point-of-interest interactive system and method based on artificial intelligence.

Background technique

Artificial Intelligence (AI) is a new technical science that studies and develops theories, methods, techniques, and applications for simulating, extending, and extending human intelligence. Artificial intelligence is a branch of computer science that attempts to understand the essence of intelligence and produce a new kind of intelligent machine that can respond in a way similar to human intelligence. Research in this field includes intelligent ordering robots, language recognition, Image recognition, natural language processing, and expert systems.

With the development of economy and society, restaurant waiters are a demanding job, and users are

increasingly demanding food service. More demand.

In the related technology, the way to solve the restaurant order service of the catering enterprise is mainly based on the method of the manual waiter, supplemented by the new equipment of the automatic screen touch type self-service ordering machine. However, all of the above methods have various problems and cannot meet the needs of users and enterprises.

Summary of the invention

The present invention aims to solve at least one of the technical problems in the related art to some extent.

To this end, an object of the present invention is to provide an order-based interactive system based on artificial intelligence, which can better meet the needs of users and enterprises.

Another object of the present invention is to provide an artificial intelligence based point-of-mouth interaction method.

In order to achieve the above objective, the artificial intelligence-based ordering interaction system proposed by the first aspect of the present invention includes: a smart ordering robot and a display screen; the smart ordering robot is used to communicate with the user through natural language. Meal interaction; the display screen is used to display order information.

The artificial intelligence-based order-and-meal interaction system proposed by the first aspect of the present invention can better satisfy the needs of enterprises and users by ordering meals through a smart ordering robot.

In order to achieve the above objective, the artificial intelligence-based point-of-meal interaction method proposed by the second aspect of the present invention includes: performing a point-of-meal interaction with a user through natural language communication through a smart ordering robot; and performing order information on the display screen display.

The artificial intelligence-based point-of-meal interaction method proposed by the second aspect of the present invention can better satisfy the needs of enterprises and users by ordering meals through a smart ordering robot.

The additional aspects and advantages of the invention will be set forth in part in the description which follows.

DRAWINGS

The above and/or additional aspects and advantages of the present invention will become apparent and readily understood from

1 is a schematic structural diagram of an artificial intelligence based ordering interaction system according to an embodiment of the present invention;

2 is a schematic structural diagram of a smart ordering robot according to an embodiment of the present invention;

3 is another schematic structural diagram of a smart ordering robot in an embodiment of the present invention;

4 is another schematic structural diagram of a smart ordering robot in an embodiment of the present invention;

FIG. 5 is a schematic flowchart of an artificial intelligence based point-of-order interaction method according to an embodiment of the present invention; FIG.

FIG. 6 is a schematic flow chart of a meal order interaction by a smart ordering robot in an embodiment of the present invention.

Detailed ways

The embodiments of the present invention are described in detail below, and the examples of the embodiments are illustrated in the accompanying drawings, in which the same or similar reference numerals indicate the same or similar modules or modules having the same or similar functions. The embodiments described below with reference to the accompanying drawings are intended to be illustrative of the invention and are not to be

construed as limiting. Rather, the invention is to cover all modifications, variations and equivalents within the spirit and scope of the appended claims.

FIG. 1 is a schematic structural diagram of an artificial intelligence based ordering interaction system according to an embodiment of the present invention.

Referring to FIG. 1, the system includes: a smart ordering robot 11 and a display screen 12; the smart ordering robot 11 is configured to perform a meal order interaction with a user through natural language communication; and the display screen 12 is configured to display ordering information. Among them, the smart ordering robot and the display screen can be connected by wire or wirelessly.

The order information may include: menu content, dish amount, ordered meal, ordered meal amount, and the like.

Specifically, as shown in FIG. 1, the display screen may be specifically a screen with a larger size to fully display related content. The display screen can communicate with the smart ordering robot to display the display content indicated by the smart ordering robot. Initially, the menu content and menu amount can be displayed on the display screen. After the user interacts with the intelligent ordering robot, the intelligent ordering robot can collect the information that the user has ordered the meal (for example, the user says to select the package 4), and the smart ordering robot can collect the information of the ordered meal, and can be in the menu. In the content, the ordered meal is indicated as the selected state and displayed through the display screen. In addition, the smart ordering robot can calculate the amount of the ordered meal during the user's ordering process, and transmit it to the display screen, which is displayed by the display screen. Display to make it easier for users to view the ordered meals and the corresponding amount.

Among them, the intelligent ordering robot includes: the body of the intelligent ordering robot.

As shown in FIG. 1, the body includes: a body of a smart ordering robot and a head of a smart ordering robot, and the head may further include a face, and the face may be specifically a high-resolution display for displaying a smart meal. The expression of the robot.

In some embodiments, referring to FIG. 2, the smart ordering robot 11 includes a body 111, and may further include: an information collecting module 112, and the information collecting module 112 is configured to collect input information.

The information collection module may include: a camera, and/or a microphone array.

The camera is used to collect the user's face information, and the microphone array is used to collect the user's voice information and/or the location information of the user.

The camera can be specifically a high-definition camera.

The camera can be specifically mounted on the head of the smart ordering robot, and the microphone array includes, for example, eight microphones, which are evenly mounted on the body of the smart ordering robot. The microphone array may specifically be a sound source positioning microphone array, so that not only the user's voice information can be collected, but also the location information of the user can be located according to the sound information.

In some embodiments, referring to FIG. 3, the smart ordering robot 11 may further include: an information processing module 113 disposed in the body, and the information processing module 113 is configured to perform processing according to the input information collected by the information collecting module 112, and the processing includes the following items. One or more of them:

Far field sound processing;

Locating and/or tracking the user based on the user's voice information;

Locating and/or tracking the user according to the user's face information;

Controlling the body to perform an action;

Controlling the ontology to display an expression;

Converting text information into sound information by Text To Speech (TTS) to play the sound information;

Controlling the display screen to present image and/or textual information.

Among them, because the user interacts with the intelligent ordering robot, there is a certain distance between the user and the intelligent ordering robot (usually more than half a meter), which is different from the near-field sound of the person and the mobile phone. The far-field sound processing is performed in the intelligent ordering robot, for example, performing sound enhancement and the like to better capture the user's voice information.

In addition, the smart ordering robot can also locate the user and determine the location of the user. When the user is located, it may be performed according to the face information collected by the camera, and/or may be performed according to the sound information collected by the microphone array.

In addition, the information processing module in the smart ordering robot can also control the body of the smart ordering robot to perform the action.

The controlling the body to perform the action may include: controlling the body of the intelligent ordering robot to perform rotation. For example, after the information processing module determines the position of the user through the positioning process, the body of the smart ordering robot may be controlled to rotate, so as to make the smart ordering The face of the robot faces the user, thus achieving a natural and friendly relationship between people.

The controlling the body to perform the action may further include: controlling the head of the intelligent ordering robot to perform the action, wherein the head of the intelligent ordering robot may have two degrees of freedom, for example, the horizontal direction shaking head and the turning head motion may be performed. It is also possible to perform a nodding action in the vertical direction and the like.

In addition, the information processing module in the smart ordering robot can also control the body of the smart ordering robot to display the expression. Wherein, as shown above, the smart ordering robot includes a face, and the face may be specifically a display screen so that an expression can be displayed on the display screen. For example, a smart ordering robot can display a variety of expressions such as happiness, sadness, or embarrassment.

In addition, when the user interacts with the smart ordering robot, the smart ordering robot can obtain corresponding text information from the cloud or from the local, and convert the text information into sound information through TTS technology, and then the sound information can be transmitted through the information output module. Play to the user. Among them, the text signaling converted into a voice is, for example, a welcome message, an answer information for solving a user consultation, and the like.

In addition, the smart ordering robot can also send related information to the display screen, and control the display screen to display related information, such as menu content, information that the user has ordered the meal, the calculated amount of the ordered meal, and the like.

In this embodiment, the smart ordering robot can accurately determine in which direction the person is speaking to the camera through the camera and the microphone array, so that the user can always turn the body to maintain a human-oriented posture during the service process, just like a person talking to a person. It's natural and kind. The facial expressions and movements of the intelligent ordering robot can communicate and feedback with people like people. For example, it has various expressions such as happiness, sadness, embarrassment, etc., and can match the corresponding nodding, shaking his head, turning his head, turning around. Waiting for the action, the interaction is naturally interesting.

In some embodiments, referring to FIG. 4, the smart ordering robot 11 may further include: a communication module 114 and an information output module 115 disposed in the body, and the communication module 114 is configured to send the input information to the cloud, so that the cloud obtains feedback information according to the input information, and receives the feedback information sent by the cloud. The information output module 115 is configured to feed back the feedback information to the user.

The information output module may be specifically a speaker.

Further, the user can speak in a natural language while speaking, and the speaker can also play back feedback information in a natural language. Thus, the user and the smart ordering robot can interact in a natural language.

In this embodiment, the intelligent ordering robot has the natural language interaction ability like a human, and the user can respond correctly by giving it a voice, giving correct feedback and speaking through the speaker, so it is different from The high-use threshold of the automatic screen-touch self-service ordering machine has the characteristics of low threshold for use, and all the people, including the elderly, children, low-education population, illiterate, visually disabled, and people who do not use computers, can easily Use.

In some embodiments, the feedback information may be personalized information obtained by the cloud according to one or more of the following information:

The user's face information, the current season, the current time period, the current city, and the latitude and longitude coordinates of the smart ordering robot.

Among them, the intelligent ordering robot has the ability to "recognize people", which can collect the current user's face image collected in real time through the high-definition camera mounted on the head, and transmit it to the cloud for user gender, age, work type analysis, or The user's emotional state is analyzed to give a personalized meal recommendation based on the analysis result. For example, a 25-year-old female user wearing a professional suit can order food, and the robot can recommend a low-calorie meal that is more suitable for female users: "It is recommended that you try to accompany the chicken with shrimp. This hamburger has the lowest fat content and can Give you plenty of energy while helping you stay slim." For example, a child around 12 years old can order food, and the robot can say a personalized welcome message: "Hello children, today is Children's Day, I wish you a happy holiday, what do you want to eat?" Give a recommended meal that is more suitable for children.

The intelligent ordering robot can also give personalized meal recommendations according to different seasons, different time periods in different days, and different cities. For example, when the user asks the robot in the morning: "You recommend me something to eat," the robot will recommend breakfast meals according to the time period; when the user asks the robot at 2 pm: "You recommend me something to eat. ", the robot will recommend the afternoon coffee package according to the time period.

Through the above processing, the intelligent ordering robot has functions such as "seeing", "listening", "speaking", "face tracking", and "face detection recognition judgment".

The ordering process based on the above-mentioned ordering interactive system is as follows:

(1)

Start ordering: the user makes a request for the robot

(2)

Choose a meal style (choose dine/takeaway)

(3)

Order consultation

Among them, users can consult about meal content, food health and calories, and meal-related issues such as how to issue invoices through natural language interaction.

The robot can also provide users with personalized meal recommendations - the robot can collect the user's face image through the camera, and analyze the user's gender, age, and work type to give personalized meal recommendations.

(4)

Choose a meal

Among them, the user can put forward various special requirements while ordering, the robot can correctly identify and satisfy the intention, and at the same time quickly calculate the price change of the meal, and display the price change in real time on the big screen.

(5)

Change meal / change drink / change snack

Among them, the user can change, delete the meal at any time, replace the drinks and snacks in the package, and the robot will immediately complete the calculation of the changed meal amount and inform the user.

(6)

Confirm order: make the order content, amount confirmation

(7)

Making a payment: The user uses the QR code displayed on the WeChat/Alibaba/Baidu wallet scanning screen to make a payment, and the robot can immediately obtain the payment success/failure situation, giving the customer corresponding prompts and feedback.

(8)

Order is complete.

The robot will immediately take the order number and display it on the big screen and broadcast it to the user.

The user can take a meal with the payment voucher on the mobile phone or the order number displayed on the large screen.

(9)

Other answers to the consulting services for shops and dining.

After the above analysis, the intelligent ordering robot has the following advantages:

(1) Ability to personalize services and recommendations.

For example, the cloud described above can obtain personalized information according to input information collected by the smart ordering robot.

(2) With natural language interaction like humans, the threshold is low and everyone can use it.

For example, natural language interaction between the user described above and the smart ordering robot can be employed.

(3) The image is friendly and interactive.

For example, the intelligent robot described above can be turned to user communication, rich expressions, actions, and the like.

In addition, since the smart ordering robot is a kind of robot, it also has the following advantages:

(4) The cost is low and controllable.

Smart ordering robots only need to invest once in the purchase cost.

Take a robot with a hardware purchase cost of 10,000 yuan and a mechanical life of 5 years (for example, different life spans of different robot designs). For example, the monthly average cost is only 167 yuan, plus monthly demand. The electricity fee is about 30 yuan (calculated according to commercial electricity consumption of 0.8 yuan / kWh), and the total monthly cost is only less than 200 yuan.

It is far lower than the monthly salary of about 3,500-4,500 yuan for the labor attendant.

(5) High stability

The stability of smart ordering robots is much higher than that of labor.

The robot will not get sick, will not quit, need no leave, and can work stably for about 20 hours every day.

The intelligent ordering robot has a low error rate and does not make mistakes like fatigue due to fatigue, such as calculating the price and other common skills of the waiter, and the robot can guarantee 100% correct rate.

Intelligent ordering robots can maintain a stable service level through procedures, and have a high degree of customization. For example, how to say welcome words, what kind of standardization words to use for disputes, and how to serve in a standardized language can be completely based on customer companies. The requirements are customized and consistently maintained.

(6) Superior computing power

For the labor attendant, the calculation of the meal amount at the time of ordering is a work item that is easy to make mistakes and requires a high degree of human ability, but for the robot, the robot has a superb amount of calculation ability. After obtaining the user's order and meal change request, the correct meal amount can be calculated immediately for feedback without error.

(7) Can adapt to long-term, high-intensity work.

The intelligent ordering robot can work stably for about 20 hours every day, and it will not increase the error rate when working for a long time. It does not need to be shifting like a labor attendant, no need to go to the bathroom, no need to rest.

In summary, the intelligent ordering robot can stably provide low-cost food and beverage service capabilities through unprecedented natural person-to-person interaction, and can work for a long time with high intensity and low error rate, which greatly reduces the cost of catering enterprises. At the same time, improve the level of catering services.

FIG. 5 is a schematic flow chart of an artificial intelligence based ordering interaction method according to an embodiment of the present invention.

Referring to FIG. 5, the method in this embodiment includes:

S51: Perform a meal-and-meal interaction through natural language communication with the user through the smart ordering robot.

S52: Display the order information through the display screen.

In some embodiments, referring to FIG. 6, the process of performing a meal order interaction may include:

S61: Acquire input information, where the user's face information collected by the camera, and/or the user's voice information collected by the microphone array and/or the location information of the user.

The sound information may be sound information in a natural language.

S62: Perform processing according to the input information.

The process includes one or more of the following:

Far field sound processing;

Locating and/or tracking the user based on the user's voice information;

Locating and/or tracking the user according to the user's face information;

Controlling the body to perform an action;

Controlling the ontology to display an expression;

Converting text information into sound information by TTS to play the sound information;

Controlling the display screen to present image and/or textual information.

S63: Send the input information to the cloud, so that the cloud obtains feedback information according to the input information, and receives the feedback information sent by the cloud;

S64: The feedback information is fed back to the user.

Among them, the feedback information can be played in a natural language through a speaker.

Further, the feedback information is personalized information obtained by the cloud according to one or more

of the following information:

The user's face information, the current season, the current time period, the current city, and the latitude and longitude coordinates of the smart ordering robot.

It can be understood that the method in this embodiment corresponds to the foregoing system. For details, refer to related descriptions in the system, and details are not described herein.

In this embodiment, the ordering by the smart ordering robot can meet the needs of enterprises and users.

It should be noted that in the description of the present invention, the terms "first", "second" and the like are used for descriptive purposes only, and are not to be construed as indicating or implying relative importance.

Further, in the description of the present invention, the meaning of "a plurality" means at least two unless otherwise stated.

Any process or method description in the flowcharts or otherwise described herein may be understood to represent a module, segment or portion of code that includes one or more executable instructions for implementing the steps of a particular logical function or process. And the scope of the preferred embodiments of the invention includes additional implementations, in which the functions may be performed in a substantially simultaneous manner or in an opposite order depending on the functions involved, in the order shown or discussed. It will be understood by those skilled in the art to which the embodiments of the present invention pertain.

It should be understood that portions of the invention may be implemented in hardware, software, firmware or a combination thereof.

In the above-described embodiments, multiple steps or methods may be implemented in software or firmware stored in a memory and executed by a suitable instruction execution system. For example, if implemented in hardware, as in another embodiment, it can be implemented by any one or combination of the following techniques well known in the art: having logic gates for implementing logic functions on data signals. Discrete logic circuits, application specific integrated circuits with suitable combinational logic gates, programmable gate arrays (PGAs), field programmable gate arrays (FPGAs), etc.

One of ordinary skill in the art can understand that all or part of the steps carried by the method of implementing the above embodiments can be completed by a program to instruct related hardware, and the program can be stored in a computer readable storage medium. When executed, one or a combination of the steps of the method embodiments is included.

In addition, each functional unit in each embodiment of the present invention may be integrated into one processing module, or each unit may exist physically separately, or two or more units may be integrated into one module. The above integrated modules can be implemented in the form of hardware or in the form of software functional modules. The integrated modules, if implemented in the form of software functional modules and sold or used as stand-alone products, may also be stored in a computer readable storage medium.

The above mentioned storage medium may be a read only memory, a magnetic disk or an optical disk or the like.

In the description of the present specification, the description with reference to the terms "one embodiment", "some embodiments", "example", "specific example", or "some examples" and the like means a specific feature described in connection with the embodiment or example. A structure, material or feature is included in at least one embodiment or example of the invention. In the present specification, the schematic representation of the above terms does not necessarily mean the same embodiment or example. Furthermore, the particular features, structures, materials, or characteristics described may be combined in a suitable manner in any one or more embodiments or examples.

Although the embodiments of the present invention have been shown and described, it is understood that the above-described embodiments are illustrative and are not to be construed as limiting the scope of the invention. The embodiments are subject to variations, modifications, substitutions and variations.

Notice

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CLAIMS CN105894405

1.

An artificial intelligence-based ordering interaction system, comprising: an intelligent ordering robot and a display screen; the smart ordering robot is configured to perform a point-of-day interaction with a user through natural language communication; Display the order information.

2.

The system according to claim 1, wherein the smart ordering robot comprises: a body of the intelligent ordering robot; an information collecting module disposed on the body, wherein the information collecting module is configured to collect input information.

3.

The system according to claim 2, wherein the information collecting module comprises: a camera for collecting face information of the user; and/or a microphone array for collecting sound information of the user and/or the user Bearing information.

4.

The system of claim 3 wherein said sound information is sound information in natural language.

5.

The system according to claim 2, wherein the smart ordering robot further comprises: an information processing module disposed in the body, the information processing module configured to perform processing according to the input information, The processing includes one or more of the following: far-field sound processing; positioning and/or tracking the user according to the user's voice information; positioning and/or tracking the user according to the user's face information; controlling the body Performing an action; controlling the ontology to display an expression; converting the text information into sound information by TTS to play the sound information.

Controlling the display screen to present image and/or textual information.

6.

The system according to claim 2, wherein the smart ordering robot further comprises: a communication module disposed in the body, the communication module configured to send the input information to the cloud to And the information output module is configured to feed the feedback information to the user.

7.

The system of claim 6 wherein said information output module is a speaker, wherein said speaker plays said feedback information in a natural language.

8.

The system according to claim 6, wherein the feedback information is personalized information obtained by the cloud according to one or more of the following information: a user's face information, a current season, a current time period, and a current The latitude and longitude coordinates of the city and the intelligent ordering robot.

9.

An artificial intelligence-based point-of-mouth interaction method, comprising: performing a point-of-meal interaction through natural language communication with a user through a smart ordering robot; displaying the order information through a display screen.

10.

The method according to claim 9, wherein the performing the meal order interaction comprises: collecting input information, the input information comprising: a face information of the user collected by the camera, and/or collecting through the microphone array The user's voice information and/or the location information of the user.

11.

The method of claim 10 wherein said sound information is sound information in natural language.

12.

The method according to claim 10, wherein the performing the meal order interaction further comprises: performing processing according to the input information, the process comprising one or more of the following: far field sound processing; Locating and/or tracking the user according to the user's voice information; locating and/or tracking the user according to the user's face information; controlling the body to perform an action; controlling the body to display an expression; and converting the text information into Sound information to play the sound information.

Controlling the display screen to present image and/or textual information.

13.

The method according to claim 10, wherein the performing the meal order interaction further comprises: transmitting the input information to the cloud, so that the cloud obtains feedback information according to the input information, and receives the The feedback information sent by the cloud; the feedback information is fed back to the user.

14.

The method according to claim 13, wherein the feeding back the feedback information to the user comprises: playing the feedback information in a natural language through a speaker.

15.

The method according to claim 13, wherein the feedback information is personalized information obtained by the cloud according to one or more of the following information: a user's face information, a current season, a current time period, and a current The latitude and longitude coordinates of the city and the intelligent ordering robot.



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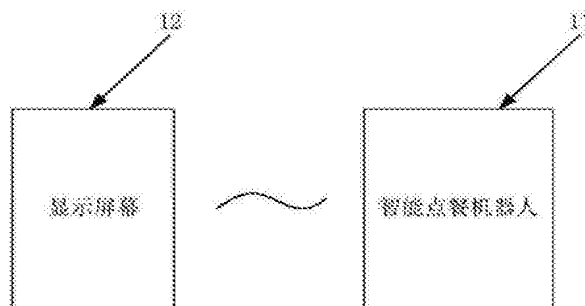
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(54)发明名称

基于人工智能的点餐交互系统和方法

(57)摘要

本发明提出一种基于人工智能的点餐交互系统和方法,该基于人工智能的点餐交互系统包括:智能点餐机器人和显示屏幕;所述智能点餐机器人用于与用户进行通过自然语言交流的点餐交互;所述显示屏幕用于显示点餐信息。该系统能够更好的满足企业和用户的需求。



1. 一种基于人工智能的点餐交互系统,其特征在于,包括:
智能点餐机器人和显示屏幕;
所述智能点餐机器人用于与用户进行通过自然语言交流的点餐交互;
所述显示屏幕用于显示点餐信息。
2. 根据权利要求1所述的系统,其特征在于,所述智能点餐机器人包括:
智能点餐机器人的本体;
设置在所述本体上的信息采集模块,所述信息采集模块用于采集输入信息。
3. 根据权利要求2所述的系统,其特征在于,所述信息采集模块包括:
摄像头,用于采集用户的人脸信息;和/或,
麦克风阵列,用于采集用户的语音信息和/或用户所在的方位信息。
4. 根据权利要求3所述的系统,其特征在于,所述声音信息是自然语言的声音信息。
5. 根据权利要求2所述的系统,其特征在于,所述智能点餐机器人还包括:
设置在所述本体内的信息处理模块,所述信息处理模块用于根据所述输入信息进行处理,所述处理包括如下项中的一项或多项:
远场声音处理;
根据用户的语音信息对用户进行定位和/或跟踪;
根据用户的人脸信息对用户进行定位和/或跟踪;
控制所述本体进行动作;
控制所述本体展现表情;
通过TTS将文字信息转换为声音信息,以播放所述声音信息。
控制所述显示屏幕展现图像和/或文字信息。
6. 根据权利要求2所述的系统,其特征在于,所述智能点餐机器人还包括:
设置在所述本体内的通信模块,所述通信模块用于将所述输入信息发送给云端,以使所述云端根据所述输入信息得到反馈信息,并接收所述云端发送的所述反馈信息;
设置在所述本体内的信息输出模块,所述信息输出模块用于将所述反馈信息反馈给用户。
7. 根据权利要求6所述的系统,其特征在于,所述信息输出模块是音箱,其中,所述音箱以自然语言播放所述反馈信息。
8. 根据权利要求6所述的系统,其特征在于,所述反馈信息是云端根据如下信息中的一项或多项得到的个性化信息:
用户的人脸信息、当前季节、当前的时间段、当前城市、智能点餐机器人的经纬度坐标。
9. 一种基于人工智能的点餐交互方法,其特征在于,包括:
通过智能点餐机器人与用户进行通过自然语言交流的点餐交互;
通过显示屏幕对点餐信息进行显示。
10. 根据权利要求9所述的方法,其特征在于,所述进行点餐交互,包括:
采集输入信息,所述输入信息包括:通过摄像头采集的用户的人脸信息,和/或,通过麦克风阵列采集的用户的语音信息和/或用户所在的方位信息。
11. 根据权利要求10所述的方法,其特征在于,所述声音信息是自然语言的声音信息。
12. 根据权利要求10所述的方法,其特征在于,所述进行点餐交互,还包括:

根据所述输入信息进行处理,所述处理包括如下项中的一项或多项:

远场声音处理;

根据用户的语音信息对用户进行定位和/或跟踪;

根据用户的人脸信息对用户进行定位和/或跟踪;

控制所述本体进行动作;

控制所述本体展现表情;

通过TTS将文字信息转换为声音信息,以播放所述声音信息。

控制所述显示屏展现图像和/或文字信息。

13.根据权利要求10所述的方法,其特征在于,所述进行点餐交互,还包括:

将所述输入信息发送给云端,以使所述云端根据所述输入信息得到反馈信息,并接收所述云端发送的所述反馈信息;

将所述反馈信息反馈给用户。

14.根据权利要求13所述的方法,其特征在于,所述将所述反馈信息反馈给用户,包括:

通过音箱,以自然语言播放所述反馈信息。

15.根据权利要求13所述的方法,其特征在于,所述反馈信息是云端根据如下信息中的一项或多项得到的个性化信息:

用户的人脸信息、当前季节、当前的时间段、当前城市、智能点餐机器人的经纬度坐标。

基于人工智能的点餐交互系统和方法

技术领域

[0001] 本发明涉及互联网技术领域,尤其涉及一种基于人工智能的点餐交互系统和方法。

背景技术

[0002] 人工智能(Artificial Intelligence, AI)是研究、开发用于模拟、延伸和扩展人的智能的理论、方法、技术及应用系统的一门新的技术科学。人工智能是计算机科学的一个分支,它企图了解智能的实质,并生产出一种新的能以人类智能相似的方式做出反应的智能机器,该领域的研究包括智能点餐机器人、语言识别、图像识别、自然语言处理和专家系统等。

[0003] 随着经济社会的发展,餐厅服务员是一个需求很大的工作岗位,又由于用户对于就餐服务的要求越来越高,用户和餐饮企业对高素质、高服务水平的点餐服务员有越来越多的需求。

[0004] 相关技术中,解决餐饮企业的餐厅点餐服务的方式主要以人工服务员的方式为主,以自动屏幕触控式自助点餐机的新型设备为辅。但是,上述方式都存在种种问题,无法很好的满足用户和企业的需求。

发明内容

[0005] 本发明旨在至少在一定程度上解决相关技术中的技术问题之一。

[0006] 为此,本发明的一个目的在于提出一种基于人工智能的点餐交互系统,该系统可以更好的满足用户和企业的需求。

[0007] 本发明的另一个目的在于提出一种基于人工智能的点餐交互方法。

[0008] 为达到上述目的,本发明第一方面实施例提出的基于人工智能的点餐交互系统,包括:智能点餐机器人和显示屏幕;所述智能点餐机器人用于与用户进行通过自然语言交流的点餐交互;所述显示屏幕用于显示点餐信息。

[0009] 本发明第一方面实施例提出的基于人工智能的点餐交互系统,通过智能点餐机器人进行点餐,可以更好的满足企业和用户的需求。

[0010] 为达到上述目的,本发明第二方面实施例提出的基于人工智能的点餐交互方法,包括:通过智能点餐机器人与用户进行通过自然语言交流的点餐交互;通过显示屏幕对点餐信息进行显示。

[0011] 本发明第二方面实施例提出的基于人工智能的点餐交互方法,通过智能点餐机器人进行点餐,可以更好的满足企业和用户的需求。

[0012] 本发明附加的方面和优点将在下面的描述中部分给出,部分将从下面的描述中变得明显,或通过本发明的实践了解到。

附图说明

[0013] 本发明上述的和/或附加的方面和优点从下面结合附图对实施例的描述中将变得明显和容易理解,其中:

[0014] 图1是本发明一个实施例提出的基于人工智能的点餐交互系统的结构示意图;

[0015] 图2是本发明实施例中智能点餐机器人的一种结构示意图;

[0016] 图3是本发明实施例中智能点餐机器人的另一种结构示意图;

[0017] 图4是本发明实施例中智能点餐机器人的另一种结构示意图;

[0018] 图5是本发明一个实施例提出的基于人工智能的点餐交互方法的流程示意图;

[0019] 图6是本发明实施例中通过智能点餐机器人进行点餐交互的流程示意图。

具体实施方式

[0020] 下面详细描述本发明的实施例,所述实施例的示例在附图中示出,其中自始至终相同或类似的标号表示相同或类似的模块或具有相同或类似功能的模块。下面通过参考附图描述的实施例是示例性的,仅用于解释本发明,而不能理解为对本发明的限制。相反,本发明的实施例包括落入所附加权利要求书的精神和内涵范围内的所有变化、修改和等同物。

[0021] 图1是本发明一个实施例提出的基于人工智能的点餐交互系统的结构示意图。

[0022] 参见图1,该系统包括:智能点餐机器人11和显示屏幕12;智能点餐机器人11用于与用户进行通过自然语言交流的点餐交互;显示屏幕12用于显示点餐信息。其中,智能点餐机器人与显示屏幕可以通过有线或无线方式进行连接。

[0023] 其中,点餐信息可以包括:菜单内容、菜品金额、已点餐点、已点餐点金额等。

[0024] 具体的,如图1所示,显示屏幕可以具体是尺寸较大的屏幕,以充分显示相关内容。显示屏幕可以与智能点餐机器人进行通信,以显示智能点餐机器人指示的显示内容。初始时,显示屏幕上可以显示菜单内容和菜品金额。当用户与智能点餐机器人交互后,智能点餐机器人可以采集到用户已点餐点的信息(如用户说选择套餐4),智能点餐机器人采集到已点餐点的信息后,可以在菜单内容中将已点餐点表示为选中状态,并通过显示屏幕显示出来,另外,智能点餐机器人在用户点餐过程中,可以计算已点餐点的金额,并传输给显示屏幕,由显示屏幕进行显示,以方便用户查看已点餐点及对应的金额。

[0025] 其中,智能点餐机器人包括:智能点餐机器人的本体。

[0026] 如图1所示,本体包括:智能点餐机器人的身体和智能点餐机器人的头部,头部还可以包括脸部,脸部可以具体是一个高分辨率显示屏,用于显示智能点餐机器人的表情。

[0027] 一些实施例中,参见图2,智能点餐机器人11包括本体111之外,还可以包括:信息采集模块112,信息采集模块112用于采集输入信息。

[0028] 其中,信息采集模块可以包括:摄像头,和/或,麦克风阵列。

[0029] 摄像头用于采集用户的人脸信息,麦克风阵列用于采集用户的语音信息和/用户所在的方位信息。

[0030] 摄像头可以具体是高清摄像头。

[0031] 摄像头可以具体安装在智能点餐机器人的头部,麦克风阵列例如包括8个麦克风,均匀安装在智能点餐机器人的身体上。麦克风阵列可以具体是声源定位麦克风阵列,从而不仅可以采集到用户的语音信息,还可以根据语音信息定位出用户所在的方位信息。

[0032] 一些实施例中,参见图3,智能点餐机器人11还可以包括:设置在本体内的信息处理模块113,信息处理模块113用于根据信息采集模块112采集的输入信息进行处理,处理包括如下项中的一项或多项:

[0033] 远场声音处理;

[0034] 根据用户的语音信息对用户进行定位和/或跟踪;

[0035] 根据用户的人脸信息对用户进行定位和/或跟踪;

[0036] 控制所述本体进行动作;

[0037] 控制所述本体展现表情;

[0038] 通过语音合成(Text To Speech,TTS)将文字信息转换为声音信息,以播放所述声音信息;

[0039] 控制所述显示屏幕展现图像和/或文字信息。

[0040] 其中,由于用户与智能点餐机器人交互时,用户与智能点餐机器人之间存在一定的距离(通常是半米以上),与人与手机这种近场声音不同的是,此时,需要在智能点餐机器人内进行远场声音处理,例如,进行声音增强等处理,以更好的捕捉到用户的语音信息。

[0041] 另外,智能点餐机器人还可以对用户进行定位,确定用户所处的位置。在对用户进行定位时,可以是根据摄像头采集的人脸信息进行的,和/或,也可以是根据麦克风阵列采集的声音信息进行的。

[0042] 另外,智能点餐机器人内的信息处理模块还可以控制智能点餐机器人的本体进行动作。

[0043] 其中,控制本体进行动作可以包括:控制智能点餐机器人的身体进行转动,例如,信息处理模块通过定位处理确定出用户的位置后,可以控制智能点餐机器人的身体进行转动,以便使得智能点餐机器人的脸部朝向用户,从而实现人与人对话般的自然亲切。

[0044] 控制本体进行动作还可以包括:控制智能点餐机器人的头部进行动作,其中,智能点餐机器人的头部可以具有两个方向的自由度,例如,可以进行水平方向的摇头、转头动作,还可以进行垂直方向的点头动作等。

[0045] 另外,智能点餐机器人内的信息处理模块还可以控制智能点餐机器人的本体展现表情。其中,如上所示,智能点餐机器人包括脸部,脸部可以具体是一个显示屏,从而可以在显示屏上显示表情。例如,智能点餐机器人可以展现高兴、悲伤或不好意思等多种表情。

[0046] 另外,当用户与智能点餐机器人进行交互时,智能点餐机器人可以从云端或者从本地获取相应的文字信息,并通过TTS技术将文字信息转换为声音信息,之后可以通过信息输出模块将声音信息播放给用户。其中,转换为声音的文字信令例如是欢迎语、解决用户咨询的答案信息等。

[0047] 另外,智能点餐机器人还可以将相关信息发送给显示屏幕,并控制显示屏幕显示相关信息,相关信息例如菜单内容,用户已点餐点的信息、计算出的已点餐点的金额等。

[0048] 本实施例中,智能点餐机器人可以通过摄像头以及麦克风阵列,准确判断人是在哪个方向对它说话,从而可以在服务过程中一直能够转动身体保持面向人说话的姿态,就像人与人对话时那样自然亲切。智能点餐机器人的面部表情和动作,能够像人一样与人进行交流和反馈,比如它有各种高兴、悲伤、不好意思等多种表情,以及能够搭配相应的点头、摇头、转头、转身等动作,交互自然有趣。

[0049] 一些实施例中,参见图4,智能点餐机器人11还可以包括:设置在本体内的通信模块114和信息输出模块115,通信模块114用于将所述输入信息发送给云端,以使所述云端根据所述输入信息得到反馈信息,并接收所述云端发送的所述反馈信息。信息输出模块115用于将所述反馈信息反馈给用户。

[0050] 其中,信息输出模块可以具体是音箱。

[0051] 进一步的,用户在说话时可以以自然语言进行说话,另外,音箱也可以以自然语言播放反馈信息。从而,用户和智能点餐机器人可以以自然语言进行交互。

[0052] 本实施例中,智能点餐机器人具备像人一样的自然语言交互能力,用户只要对它说话,它就能正确做出反应,给予正确的反馈,并通过音箱“说”出来,所以它区别于自动屏幕触控式自助点餐机的高使用门槛,具有使用门槛低的特点,所有人群,包括老年人、儿童、低学历人群、文盲、视觉残疾人士、不会使用电脑的人群等均能够方便地使用。

[0053] 一些实施例中,上述的反馈信息可以是云端根据如下信息中的一项或多项得到的个性化信息:

[0054] 用户的人脸信息、当前季节、当前的时间段、当前城市、智能点餐机器人的经纬度坐标。

[0055] 其中,智能点餐机器人具备“识人”的能力,它能够通过搭载在头部的高清摄像头实时采集到的当前用户的人脸图片,并传输到云端进行用户性别、年龄、工作类型分析,或者,对用户的情绪状态进行分析,从而依据分析结果给出个性化的餐食推荐。比如一个25岁左右的穿着职业套装的女性用户进行点餐,机器人能够相应推荐更适合女性用户的低卡路里餐点:“建议您尝试伴鸡伴虾堡,这份汉堡的脂肪含量最低,能够在给您提供充沛能量的同时帮助您保持苗条的身材哦。”。比如一个12岁左右的小朋友进行点餐,机器人能够说出个性化的欢迎语:“你好小朋友,今天是六一儿童节,祝你节日快乐,请问你想要吃点儿什么?”,以及给出更适合儿童的推荐餐点。

[0056] 智能点餐机器人还能够根据不同的季节、一天当中不同的时间段、不同的城市,给予个性化的餐点推荐。比如:当用户在早上询问机器人:“你给我推荐点儿吃的吧”,机器人会根据时间段推荐早餐餐点;当用户在下午2点询问机器人:“你给我推荐点儿吃的吧”,机器人会根据时间段推荐午后咖啡套餐等。

[0057] 通过上述处理,智能点餐机器人具备“看”、“听”、“说”、“人脸跟踪”、“人脸检测识别判断”等功能。

[0058] 基于上述的点餐交互系统的点餐流程如下:

[0059] (1)开始点餐:用户对机器人说出相关请求

[0060] (2)选择就餐方式(选择堂食/外卖)

[0061] (3)点餐咨询

[0062] 其中,用户可以通过自然语言交互咨询关于餐点内容,食物健康和热量,就餐相关问题比如如何开具发票等。机器人还能够给用户个性化餐点推荐——机器人能够通过摄像头采集到的用户的人脸图片,进行用户性别、年龄、工作类型分析,从而给出个性化的餐食推荐。

[0063] (4)选择餐点

[0064] 其中,用户在点餐的同时可以提出各种特殊要求,机器人都能够正确识别意图并

予以满足,并同时快速计算餐点价格变化,在大屏幕上实时显示价格的变化情况。

[0065] (5)更换餐点/更换饮料/更换小食

[0066] 其中,用户可以随时更换、删除餐点,更换套餐中的饮料和小食,机器人会立即完成变更后的餐点金额计算并告知用户。

[0067] (6)确认订单:进行订单内容、金额确认

[0068] (7)进行支付:用户使用微信/支付宝/百度钱包扫描屏幕上显示的二维码进行支付,机器人能够立即获得支付成功/失败的情况,给予客户相应的提示和反馈。

[0069] (8)点餐完成。机器人将立即获取订单号码显示在大屏幕上,并语音播报给用户。用户能够凭手机上的支付凭证,或大屏幕上显示的订单号码,到取餐窗口取餐。

[0070] (9)其他关于店铺和就餐的咨询服务的解答。

[0071] 经过上述分析,智能点餐机器人有如下优点:

[0072] (1)具有个性化服务和推荐的能力。

[0073] 例如,上述描述的云端可以根据智能点餐机器人采集的输入信息得到个性化信息。

[0074] (2)具备像人一样的自然语言交互能力,使用门槛低,人人均可使用。

[0075] 例如,上述描述的用户与智能点餐机器人之间可以采用自然语言交互。

[0076] (3)形象亲切、交互自然。

[0077] 例如,上述描述的智能机器人可以转向用户交流、丰富的表情、动作等。

[0078] 另外,由于智能点餐机器人是一种机器人,还具有如下优点:

[0079] (4)成本低廉可控。

[0080] 智能点餐机器人只需要投入一次购买成本。以一台机器人1万元的硬件采购成本,机械寿命为5年(仅供举例,不同的机器人设计的使用寿命长短不同)为例,每月平摊费用仅167元,加上每月所需电费约30元(按商业用电0.8元/千瓦时计算),月总费用仅不足200元。远远低于人工服务员每月约3500-4500元的工资。

[0081] (5)稳定性高

[0082] 智能点餐机器人的稳定性远高于人工。机器人不会生病,不会跳槽,不需要请假,能够每天保证稳定工作20小时左右。

[0083] 智能点餐机器人的犯错率低,不会像人工一样由于疲劳而犯错,比如计算价格等服务员常用技能,机器人能够保证100%正确率。

[0084] 智能点餐机器人能够通过程序保持稳定的服务水准,具备高度的定制化能力,比如如何说欢迎语,发生纠纷用什么样的规范话术,如何以规范的语言进行服务,均可以完全根据客户企业的要求进行定制,并一直保持稳定的表现。

[0085] (6)具有超强的计算能力

[0086] 对于人工服务员来说,在点餐时进行餐点金额的计算是一件容易出错,并且对人的能力要求较高的工作项目,但是对于机器人来说,机器人具备超强的金额计算能力,当获得用户的点餐、餐点变更请求后,能够立即计算出正确的餐点金额进行反馈,并且不会出错。

[0087] (7)能够适应长时间、高强度的工作。

[0088] 智能点餐机器人能够每天稳定工作20小时左右,并且长时间工作也不会提升错误

率,不需要像人工服务员一样进行倒班,不需要上洗手间,不需要休息。

[0089] 综上所述,智能点餐机器人能够通过前所未有的自然的拟人交互方式,稳定地提供低成本的餐饮点餐服务能力,能够长时间高强度工作,错误率低,在大大降低餐饮企业的用人成本的同时,提升餐饮服务水平。

[0090] 图5是本发明一个实施例提出的基于人工智能的点餐交互方法的流程示意图。

[0091] 参见图5,本实施例的方法包括:

[0092] S51:通过智能点餐机器人与用户进行通过自然语言交流的点餐交互。

[0093] S52:通过显示屏幕对点餐信息进行显示。

[0094] 一些实施例中,参见图6,进行点餐交互的流程可以包括:

[0095] S61:采集输入信息,所述输入信息包括:通过摄像头采集的用户的人脸信息,和/或,通过麦克风阵列采集的用户的声音信息和/或用户所在的方位信息。

[0096] 其中,所述声音信息可以是自然语言的声音信息。

[0097] S62:根据所述输入信息进行处理。

[0098] 所述处理包括如下项中的一项或多项:

[0099] 远场声音处理;

[0100] 根据用户的声音信息对用户进行定位和/或跟踪;

[0101] 根据用户的人脸信息对用户进行定位和/或跟踪;

[0102] 控制所述本体进行动作;

[0103] 控制所述本体展现表情;

[0104] 通过TTS将文字信息转换为声音信息,以播放所述声音信息;

[0105] 控制所述显示屏幕展现图像和/或文字信息。

[0106] S63:将所述输入信息发送给云端,以使所述云端根据所述输入信息得到反馈信息,并接收所述云端发送的所述反馈信息;

[0107] S64:将所述反馈信息反馈给用户。

[0108] 其中,可以通过音箱,以自然语言播放所述反馈信息。

[0109] 进一步的,所述反馈信息是云端根据如下信息中的一项或多项得到的个性化信息:

[0110] 用户的人脸信息、当前季节、当前的时间段、当前城市、智能点餐机器人的经纬度坐标。

[0111] 可以理解的是,本实施例的方法与上述的系统对应,具体内容可以参见系统中的相关描述,在此不再详细说明。

[0112] 本实施例中,通过智能点餐机器人进行点餐,可以满足企业和用户的需求。

[0113] 需要说明的是,在本发明的描述中,术语“第一”、“第二”等仅用于描述目的,而不能理解为指示或暗示相对重要性。此外,在本发明的描述中,除非另有说明,“多个”的含义是指至少两个。

[0114] 流程图中或在此以其他方式描述的任何过程或方法描述可以被理解为,表示包括一个或更多个用于实现特定逻辑功能或过程的步骤的可执行指令的代码的模块、片段或部分,并且本发明的优选实施方式的范围包括另外的实现,其中可以不按所示出或讨论的顺序,包括根据所涉及的功能按基本同时的方式或按相反的顺序,来执行功能,这应被本发明

的实施例所属技术领域的技术人员所理解。

[0115] 应当理解,本发明的各部分可以用硬件、软件、固件或它们的组合来实现。在上述实施方式中,多个步骤或方法可以用存储在存储器中且由合适的指令执行系统执行的软件或固件来实现。例如,如果用硬件来实现,和在另一实施方式中一样,可用本领域公知的下列技术中的任一项或他们的组合来实现:具有用于对数据信号实现逻辑功能的逻辑门电路的离散逻辑电路,具有合适的组合逻辑门电路的专用集成电路,可编程门阵列(PGA),现场可编程门阵列(FPGA)等。

[0116] 本技术领域的普通技术人员可以理解实现上述实施例方法携带的全部或部分步骤是可以通过程序来指令相关的硬件完成,所述的程序可以存储于一种计算机可读存储介质中,该程序在执行时,包括方法实施例的步骤之一或其组合。

[0117] 此外,在本发明各个实施例中的各功能单元可以集成在一个处理模块中,也可以是各个单元单独物理存在,也可以两个或两个以上单元集成在一个模块中。上述集成的模块既可以采用硬件的形式实现,也可以采用软件功能模块的形式实现。所述集成的模块如果以软件功能模块的形式实现并作为独立的产品销售或使用时,也可以存储在一个计算机可读取存储介质中。

[0118] 上述提到的存储介质可以是只读存储器,磁盘或光盘等。

[0119] 在本说明书的描述中,参考术语“一个实施例”、“一些实施例”、“示例”、“具体示例”、或“一些示例”等的描述意指结合该实施例或示例描述的具体特征、结构、材料或者特点包含于本发明的至少一个实施例或示例中。在本说明书中,对上述术语的示意性表述不一定指的是相同的实施例或示例。而且,描述的具体特征、结构、材料或者特点可以在任何一个或多个实施例或示例中以合适的方式结合。

[0120] 尽管上面已经示出和描述了本发明的实施例,可以理解的是,上述实施例是示例性的,不能理解为对本发明的限制,本领域的普通技术人员在本发明的范围内可以对上述实施例进行变化、修改、替换和变型。

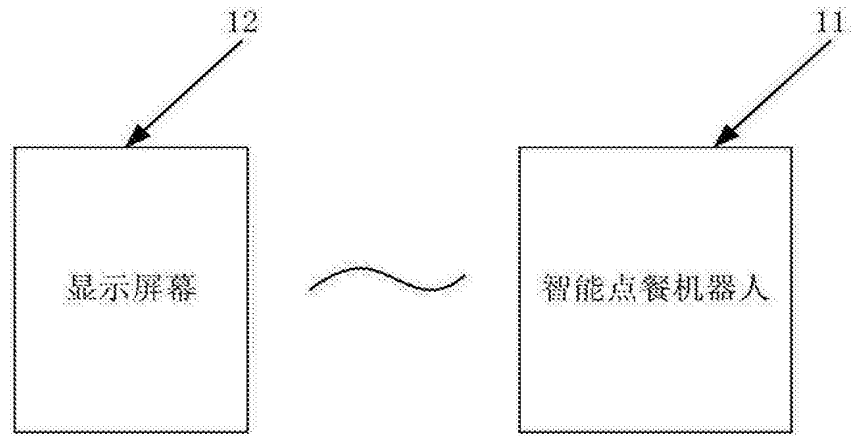


图1

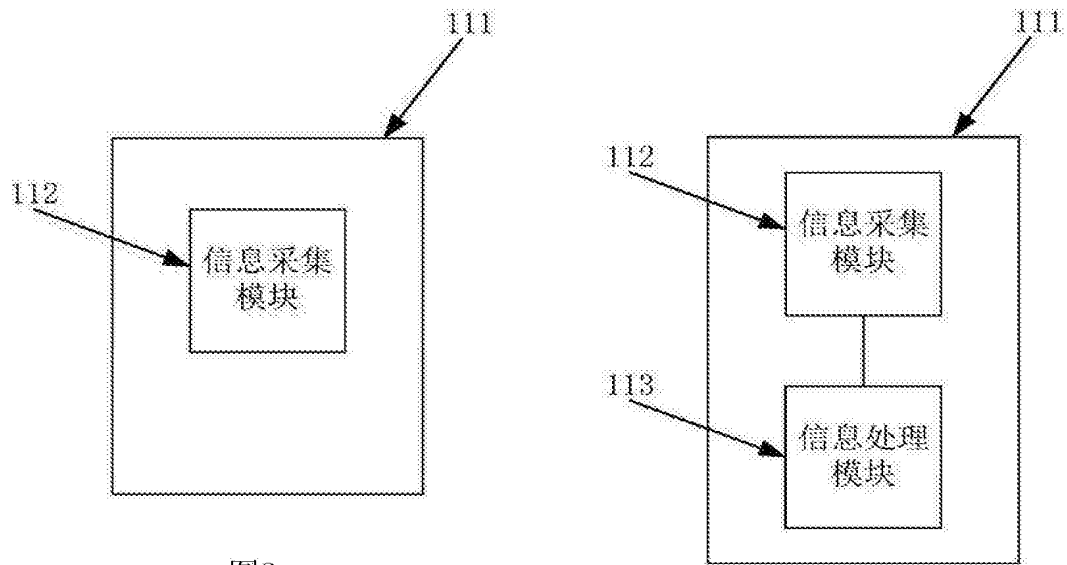


图2

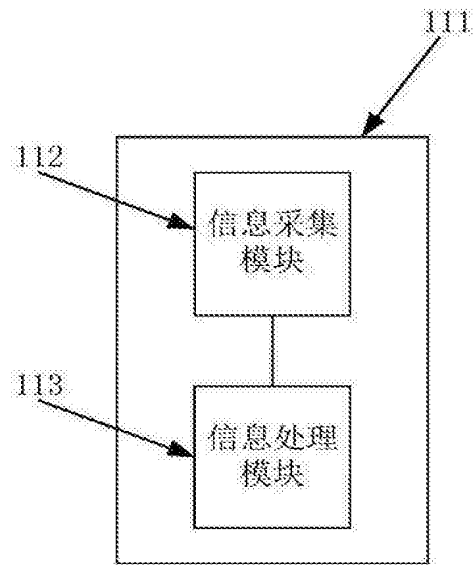


图3

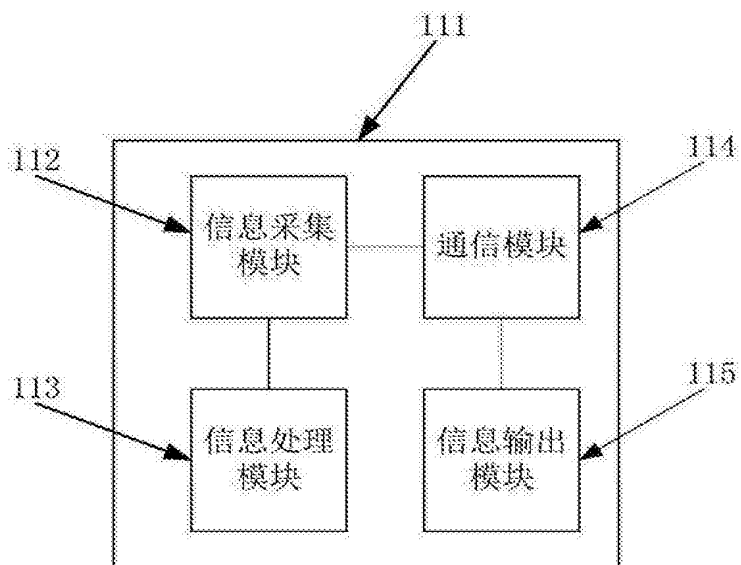


图4

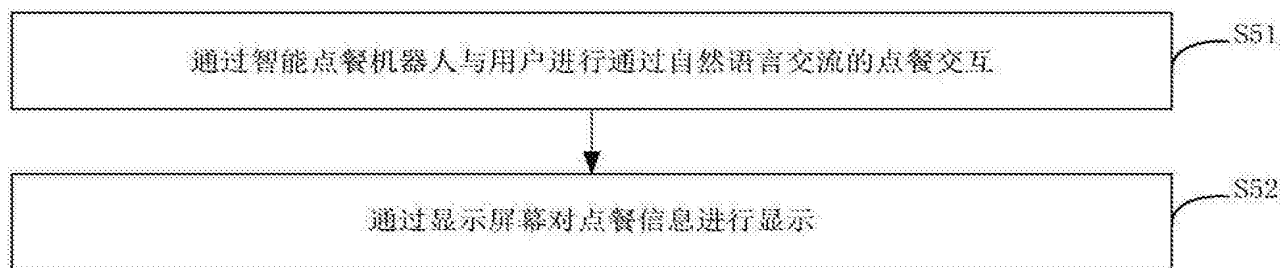


图5

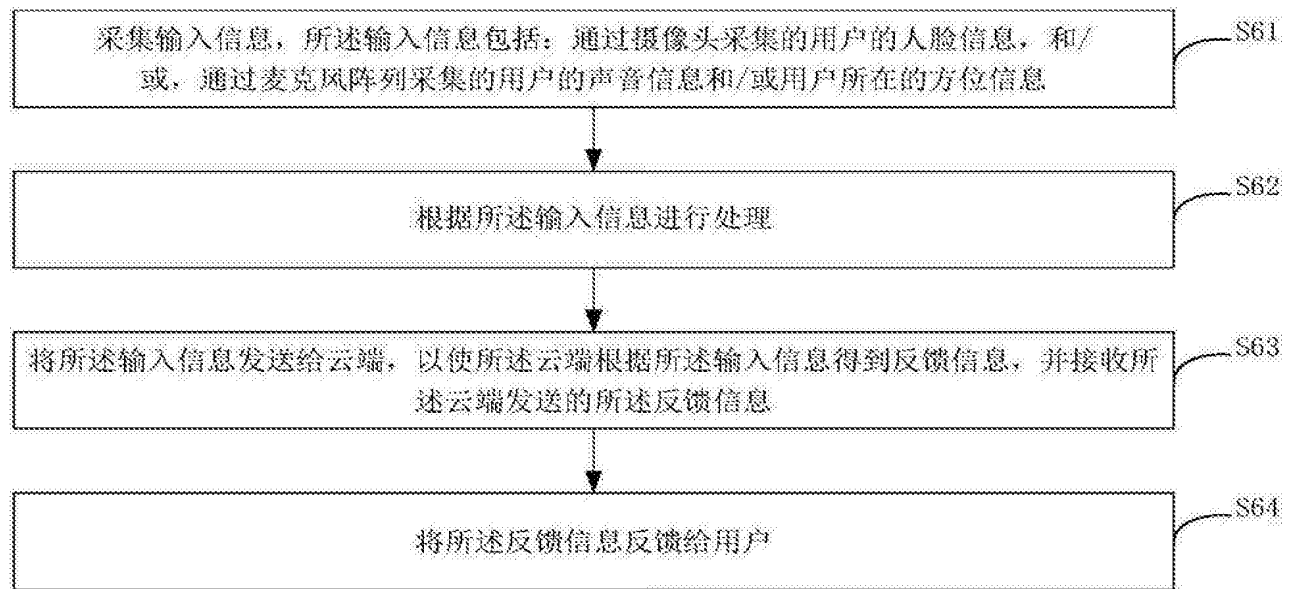


图6

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1397-4-NP
		Application Number	
Title of Invention	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

☐	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	---

Inventor Information:

Inventor	1				Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Robley	Theron	Carpenter	III		
Residence Information (Select One) • US Residency Non US Residency Active US Military Service						
City	Denver	State/Province	CO	Country of Residence	US	
Mailing Address of Inventor:						
Address 1	50 S. Steele St. #505					
Address 2						
City	Denver	State/Province	CO			
Postal Code	80209	Country	US			
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.						

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
☐ An Address is being provided for the correspondence information of this application.			
Customer Number	120775		
Email Address	jschell@rockymountainpatent.com	Add Email	Remove Email
Email Address	patents@rockymountainpatent.com	Add Email	Remove Email
Email Address	kbennett@rockymountainpatent.com		Remove Email

Application Information:

Title of the Invention	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM		
Attorney Docket Number	1397-4-NP	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	6	Suggested Figure for Publication (if any)	004

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1397-4-NP
		Application Number	
Title of Invention	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM		

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	120775		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Claims benefit of provisional	62633240	2018-02-21

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1397-4-NP
		Application Number	
Title of Invention	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM		

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Claims benefit of provisional	62581990	2017-11-06
Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	15723573	2017-10-03
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15723573	Claims benefit of provisional	62478454	2017-03-29
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)	Remove
Additional Foreign Priority Data may be generated within this form by selecting the Add button.				Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

- ☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
- NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1397-4-NP
		Application Number	
Title of Invention	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1397-4-NP
		Application Number	
Title of Invention	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM		

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1397-4-NP
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1397-4-NP
		Application Number	
Title of Invention	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM		

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ABSTRACT OF THE DISCLOSURE

An improved speech-based/natural language point-of-sale customer order system which is useful for any business that interacts with customers through speech or sound. Despite the advances in speech recognition, currently available voice ordering interfaces have proven to be unintuitive and lack reliability. Voice recognition has so far proven to be inefficient in retail contexts, and therefore voice recognition has so far achieved a low level of usage penetration in the retail sector. The present invention facilitates the automated operation of the ordering function of a drive-through restaurant, fast food restaurant or other business establishment by replacing an employee or other means of capturing order data with an ordering system employing a highly accurate speech recognition component that is able to be trained to recognize a wide vocabulary of words, and associate tones and other metadata in a manner not previously achieved in speech-to-text systems.

What is claimed is:

1. A method of training a natural language ordering system comprising the steps of:
 - providing an audio stream of customer ordering transactions;
 - slicing the audio stream into short clips;
 - transcribing the short clips into text using a transcription unit;
 - adding metadata tags to the transcribed text using the transcription unit;
 - training a speech-to-text system by populating the artificially intelligent order processing system with the transcribed text having the metadata tags.
2. The method according to claim 1 wherein the transcription unit is a crowd source platform.
3. The method according to claim 1 wherein the metadata tags provide data regarding tone or inflection that would be lost in a traditional speech-to-text conversion.
4. The method according to claim 1 wherein the speech-to-text system employs a deep neural network.
5. The method according to claim 1 further comprising the steps of:
 - identifying a word or phrase in the text using the speech-to-text processor; and
 - providing meaning for the identified word or phrase using a natural language processor.
6. The method according to claim 5 further comprising the step of generating an order with a business processor using the identified word or phrase from the natural language processor.
7. The method according to claim 5 wherein the natural language processor is configured to trigger an alert when a warning condition is encountered.

8. The method according to claim 7 wherein the warning condition is a word or phrase indicative of customer dissatisfaction or confusion.
9. The method according to claim 1 wherein the audio stream used for text transcription is a stream from a customer accessible microphone to a base station.
10. The method according to claim 9 wherein further comprising the step of decreasing the strength of the audio stream prior to transmission to the transcription unit.
11. A method of speech recognition-based order processing comprising the steps of:
 - providing an audio stream of a customer order;
 - providing an order processor having a speech recognition module trained using artificial intelligence programs;
 - converting a word or words in the audio stream to text using the speech recognition module;
 - processing the text communication with the speech recognition module to identify a word or words in the text of the converted audio stream according to a previous spoken word training;
 - providing a natural language processor having order assembly capabilities and exception detection capabilities, wherein the natural language processor receives recognized text from the order processor and creates or modifies an order based upon the recognized text;
 - generating an order with the natural language processor;
 - alerting an auditor of detected exceptions in the order; and
 - transmitting the order to a business processor, wherein the business processor communicates with a point-of-sale system to collect payment and provide notifications to release the ordered product or service.
12. The method according to claim 11 wherein the order is processed in real time.
13. The method according to claim 11 wherein the business processor receives order information from the NLP and performs the steps of:

associating the order items with one or more additional menu items or options associated with the order items; and

querying the customer about the one or more additional menu items or options associated with the order items, wherein the NLP updates the order based upon the customer response to the query.

14. The method according to claim 13 further comprising the steps of:

providing a text-to-speech processor to convert queries from the business processor into audio to be communicated to a customer; and

processing the text with the text-to-speech processor to create an audio communication of the query generated by the business processor.

15. The method according to claim 12 wherein the alert to the auditor prompts the auditor to take control of the order processing system.

16. The method according to claim 15 further comprising the steps of reviewing an order by an auditor by comparing the order generated by the natural language processor to the communication in the audio stream and updating the order based upon auditor review.

17. A method of speech recognition-based order processing comprising the steps of:

providing an audio stream of a customer order to a speech-to text processor;

providing an order processor incorporating a speech recognition module trained using artificial intelligence programs;

converting a word or words in the audio stream to text using the speech recognition module;

processing the text communication with the speech recognition module to identify a word or words in the text of the converted audio stream according to a previous spoken word training;

providing a natural language processor having order assembly capabilities and exception detection capabilities, wherein the natural language processor receives recognized text from the order processor and creates or modifies the order based upon the recognized text;

generating an order with the natural language processor;
providing an audio stream of a customer order to an auditor;
providing the generated order to the auditor;
performing a comparison of the audio stream of a customer order with the generated order by the auditor;
updating the order processor based upon errors detected in the order by the auditor; and
transmitting the order to a business processor, wherein the business processor communicates with a point-of-sale system to collect payment and provide notifications to release the ordered product or service.

18. The method according to claim 17 wherein the business processor receives order information from the NLP and performs the steps of:

associating the order items with one or more additional order items or options associated with the order items; and
querying the customer about the one or more additional order items or options associated with the order items, wherein the NLP updates the order based upon the customer response to the query.

19. The method according to claim 17 further comprising the steps of:

providing a text-to-speech processor to convert queries from the business processor into audio to be communicated to a customer; and
processing the text with the text-to-speech processor to create an audio communication of the query generated by the business processor.

20. The method according to claim 17 further comprising the step of alerting the auditor by the NLP of any exceptions detected by the artificially intelligent order processing system, wherein the auditor can override the artificially intelligent order processing system based upon the detected exception.

ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims priority to U.S. Provisional Application 62/633,240, filed February 21, 2018; and claims priority to U.S. Application No. 15/723,573, filed October 3, 2017, which claims priority to U.S. Provisional Application 62/478,454, filed March 29, 2017, each of which are hereby incorporated by reference in their entirety.

FIELD OF INVENTION

[0001] This invention relates broadly to order processing systems for commercial transactions. More specifically, this invention relates to order processing systems to facilitate the ordering or selection of products or services by a customer using natural language.

BACKGROUND OF THE INVENTION

[0002] Speech recognition systems are systems that utilize a machine to identify words or phrases in spoken language and convert them into machine readable text or instructions. Early speech recognition applications included simple tasks such as voice dialing (e.g., “call home” for a phone), simple data entry (e.g., entering a credit card number or account number audibly), speech-to-text processing (e.g., word processors or emails). As speech-to-text recognition systems have become more advanced, the applications amenable to these systems has also advanced. For example, U.S. Patent No. 9,318,108 B2 to Gruber et al. is directed to an intelligent automated assistant system that engages with the user in an integrated, conversational manner using natural language dialog, and invokes external services when appropriate to obtain information or perform various actions. Further systems have been developed whereby a device with speech recognition capabilities can control the functions of a variety of secondary devices around the home or at a commercial enterprise. For example, U.S. Patent No. 9,698,999 B2 to Mutagi teaches systems and techniques for controlling a secondary device by natural language input using a primary speech-responsive device. The secondary device

can be a device not traditionally considered “smart”, such as a desk lamp, which can be turned on and off by natural language inputs to the primary speech-responsive device.

[0003] Many businesses, including banks, retail stores and restaurants rely on verbal orders from customers. Slow, inaccurate or inefficient capture of verbal orders can frustrate customers and lead to lower sales. This is especially true in fast food restaurants. Fast food restaurants, or quick serve restaurants, are restaurants that specialize in food that can be prepared and served quickly. While many of these types of restaurants have placed an increased focus on the quality of the food served, a principal focus remains serving the customer quickly and accurately for the convenience of the customer. The process begins when the customer engages the restaurant’s order processing system, be that an employee taking an order or, more recently, interacting with a touch screen system or other touch-activated physical interface to make order selections. Streamlining the order processing system can dramatically enhance the speed of the over-all process and enhance customer satisfaction, while driving down labor-associated expenditures.

[0004] Depending on the level of customer traffic, a delay can often result when the restaurant employees are busy fulfilling other service tasks, such as collecting payment and delivering food. This delay can be significantly frustrating to customers wishing to place an order. In addition, significant amounts of time can be devoted to receiving orders by restaurant employees, which can limit their productivity in other areas of their job function. Moreover, the intense time demands on restaurant workers can lead to less pleasant interactions with customers, which can be critically impact the first impression that is created with the ordering process. And the time constraints may lead to missed opportunities for additional sales, such as through the recommendation of complimentary or new products that are available for purchase.

[0005] Attempts have been made to develop speech-based natural language ordering systems. These systems have numerous limitations that have reduced their acceptance by customers. For example, these systems have had a limited vocabulary and are poor at recognizing words spoken at different speeds or with accents in a manner analogous to that of human capability. They are also poor at

recognizing tone, such as tone that could detect growing frustration with the process requiring human intervention. Moreover, these systems often fail to make key associations between products ordered and miss the opportunity to sell or ‘up-sell’ additional items. This can lead to an unwillingness to adopt a system due to concerns over lost revenue opportunities. The present invention overcomes these short-comings as will become apparent in the foregoing description of the artificially-intelligent, natural language order processing system as taught herein.

SUMMARY OF THE INVENTION

[0006] The preferred embodiment of the invention consists of an artificially intelligent order processing system. Alternative embodiments of the invention comprise methods of deployment of the artificially intelligent order processing system. The present inventor has discovered that when configured as described herein, the artificially intelligent order processing system is useful for any business that interacts with customers through speech or sound.

[0007] In an embodiment, the present invention comprises a method of training a natural language ordering system. The method comprises the steps of (1) providing an audio stream of customer ordering transactions; (2) slicing the audio stream into short clips (also variously referred to herein as “audio clips”); (3) transcribing the short clips into text using a transcription unit; (4) adding metadata tags to the transcribed text using the transcription unit; (5) training an artificial intelligence network by populating the network with the transcribed text having the metadata tags. The short clips optionally comprise of sentences, phrases, time-limited clips (e.g. 2 seconds, 3 seconds, 4 seconds, 5 seconds, 6 seconds, 8 seconds, 10 seconds, or 15 seconds). In an embodiment, the method further includes the steps of scanning the short clips for a set of predefined parameters or words and providing the short clips having predetermined parameters or words to a transcription unit for transcribing. By keeping certain clips and discarding other clips, the present inventor has discovered that when configured as described herein, the artificially intelligent order processing system avoids overloading the transcription unit. In an embodiment, the transcription unit consists of a crowd source platform. The present inventor has discovered that in the context of invention, crowd source platforms allow for incorporation human perception and transcription of the short clips,

without requiring a dedicated staff to review the short clips. In an embodiment, the step of transcribing the short clips in the training phase is performed by a human. The present inventor has discovered that human transcription at the training stage enhances the fidelity of the recognition in later stages. Metadata tags are optionally added during transcription in embodiments. The metadata tags optionally include data on tone or inflection. The present inventor has noted that aspects such as tone or inflection are often difficult to accurately capture and recognize, especially initially, using previously existing speech-to-text processors. In an alternative embodiment, a speech-to-text processor as well known to those skilled in the art is utilized to achieve transcription.

[0008] In an embodiment, the method further comprises the steps of (1) identifying a word or phrase in the text, such as by using the speech-to-text processor, and providing meaning for the identified word or phrase using a natural language processor. In this manner, the artificially intelligent order processing system optionally attributes meaning from the audio clip to be used to assemble an order. Following attribution of meaning from the words or phrases by the artificially intelligent order processing system, an order can be generated with a business processor using the identified word or phrase from the natural language processor. In addition, the natural language processor is configured or trained in an embodiment to trigger an alert when a warning condition is encountered. Warning conditions optionally comprise utterances such as a word or phrase indicative of customer dissatisfaction or confusion. In an advantageous embodiment, the audio stream used for text transcription is a stream from a customer accessible microphone to a base station, which can then be transmitted to one or more headsets. The method in an embodiment further comprises the step of decreasing the strength of the audio stream prior to transmission to the transcription unit.

[0009] In another embodiment, the invention comprises a method of speech recognition-based order processing. The method comprises the steps of (1) providing an audio stream of a customer order; (2) providing an order processor having a speech recognition module trained using artificial intelligence programs; (3) converting a word or words in the audio stream to text using the speech recognition module ; (4) processing the text communication with the speech recognition module to identify a

word or words in the text of the converted audio stream according to a previous spoken word training; (5) providing a natural language processor having order assembly capabilities and exception detection capabilities, wherein the natural language processor receives recognized text from the order processor and creates or modifies an order based upon the recognized text; (6) generating an order with the natural language processor; (7) alerting an auditor of detected exceptions in the order; and (8) transmitting the order to a business processor, wherein the business processor communicates with a point-of-sale system to collect payment and provide notifications to release the ordered product or service. In an advantageous embodiment, the order is processed in real time. In further advantageous embodiments the business processor will receive order information from the NLP and perform the steps of associating the order items with one or more additional menu items or options associated with the order items and querying the customer about the one or more additional menu items or options associated with the order items. The NLP can then update the order based upon the customer response to the query. In this manner, upselling activity can be performed by the artificially intelligent order processing system to generate additional sales to maximize the revenue stream. In addition, the present inventor has noted that in a configuration as described herein, customer satisfaction is increased if the artificially intelligent order processing system is configured to identify typical preferences of a customer. For example, if the customer is ordering a hamburger, the customer might have a preference for how the burger is cooked (e.g. medium or well-done; mustard or no mustard). In addition, if the artificially intelligent order processing system is able to identify the customer, the artificially intelligent order processing system optionally queries the customer based upon past preferences (e.g. hold the onions on the burger or no ice in the drink). It is a further teaching of an embodiment that alert instances or conditions are defined in the artificially intelligent order processing system such that when the alert condition arises an alert to the auditor prompts the auditor to take control of the order processing system or to perform some other corrective action. Lastly, the method as described in this paragraph further comprises the steps of (1) reviewing an order by an auditor by comparing the order

generated by the natural language processor to the communication in the audio stream and (2) updating the order based upon auditor review.

[00010] In another alternative embodiment, the invention comprises a second method of speech recognition-based order processing. The method comprises the steps of (1) providing an audio stream of a customer order to a speech-to text processor; (2) providing an order processor having a speech recognition module trained using artificial intelligence programs; (3) converting a word or words in the audio stream to text using the speech recognition module ; (4) processing the text communication with the speech recognition module to identify a word or words in the text of the converted audio stream according to a previous spoken word training; (5) providing a natural language processor having order assembly capabilities and exception detection capabilities, wherein the natural language processor receives recognized text from the order processor and creates or modifies the order based upon the recognized text; (6) generating an order with the natural language processor; (7) providing an audio stream of a customer order to an auditor; (8) providing the generated order to the auditor; (9) performing a comparison of the audio stream of a customer order with the generated order by the auditor; (10) updating the order processor based upon errors detected in the order by the auditor; and (11) transmitting the order to a business processor, wherein the business processor communicates with a point-of-sale system to collect payment and provide notifications to release the ordered product or service. In an advantageous embodiment of the artificially intelligent order processing system the business processor is configured to receive order information from the NLP and perform the steps of (1) associating the order items with one or more additional order items or options associated with the order items and (2) querying the customer about the one or more additional order items or options associated with the order items. The NLP optionally then updates the order based upon the customer response to the query. In an embodiment, a text-to-speech processor is configured to convert queries from the business processor into audio to be communicated to a customer and process the text with the text-to-speech processor to create an audio communication of the query generated by the business processor. In this manner, queries generated by the business processor are utilized to communicate with the customer in association

with context-relevant communications mechanisms well understood by those skilled in the art.

BRIEF DESCRIPTION OF THE DRAWINGS

[00011] For a fuller understanding of the invention, reference should be made to the following detailed description, taken in connection with the accompanying drawings, in which:

[00012] FIG. 1 is a diagram depicting an order system under the control of an on-site employee.

[00013] FIG. 2 is a diagram depicting the initial training of an artificially intelligent order processing system implemented in a drive through restaurant where an on-site employee processes orders and a cloud-based crowd-sourcing platform transcribes the audio into text and add metadata tags. The transcribed text then populates an artificial intelligence component and the resulting output is stored for future access.

[00014] FIG. 3 is a diagram depicting an artificially intelligent order processing system configured to process orders under auditor review.

[00015] FIG. 4 is a diagram depicting an artificially intelligent order processing system configured to process orders and to operate autonomously with an auditor available for error or exception handling and/or upon the detection of customer frustration or dissatisfaction.

[00016] FIG. 5 is a flowchart depicting the training of an artificially intelligent order processing system.

[00017] FIG. 6 is a diagram depicting an artificially intelligent order processing system configured to process orders while operating autonomously with an auditor available for error or exception handling and/or upon the detection of customer frustration or dissatisfaction.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[00018] The preferred embodiment of the invention provides an improved speech-based, natural language point-of-sale customer order station which is useful for any business that interacts with customers through speech or sound. To aid in the understanding of the preferred embodiment, it will be described in this patent

application in the context of a drive-through restaurant. The preferred embodiment facilitates the automated operation of the ordering function of a drive-through restaurant, fast food restaurant or other business establishment by replacing an employee or other means of capturing order data with an ordering system employing a highly accurate speech recognition component that is able to be trained to recognize a wide vocabulary of words, and associate tones and other metadata in a manner not previously achieved in speech-to-text systems.

[00019] In the exemplary embodiments presented herein, the artificially intelligent order processing system is configured to facilitate customer interactions. A customer interacts with a system according to embodiments through a microphone at an order station where the microphone transmits the audio signal to be processed for order processing. However, it is envisioned that that the artificially intelligent order processing system is otherwise configured to facilitate customer communication through variety of electronic audio communication means, including via telephone.

[00020] Embodiments of the invention comprise a order station. In an embodiment, the order station comprises an order panel with a microphone component and a speaker component. The artificially intelligent order processing system in an embodiment is configured to be either voice or speech activated and optionally incorporates a video display, a touch screen and one or more components to facilitate payment in association with mechanisms well-understood by those skilled in the art. In an embodiment, the video display is used to display menu items (or other items for purchase or selection), to display a running list of items ordered, prices and totals, and order status (e.g., wait time, availability of items).

[00021] In an embodiment, the order station further comprises a menu display. The menu display is configured to communicate either via video as discussed above, or in fixed form, which, based upon current technology, is preferably a menu display screen, for displaying, on one or more screens, a complete listing of all available menu items and options with their respective prices and other menu item information as desired. If a touch screen and payment components are used they will preferably be positioned to be reached through the driver's window by a person seated in the driver's seat of the customer vehicle. Alternatively, if the order station is a walk-up kiosk, such as inside a restaurant, the touch screen and payment

components will preferably be positioned to be reached by a customer in a standing position. Alternatively, a customer smart phone could be used as the interface in lieu of the order station.

[00022] The artificially intelligent natural language order processing system in alternative embodiments is configured to incorporate multiple modes. In various embodiments, the order system is configured to operate either in one mode or a plurality of modes depending upon the installation and desired application. In the preferred embodiment, the intended modes can broadly be categorized as (i) a training mode, (ii) an auditor-assist mode and (iii) an autonomous mode.

[00023] In various embodiments, the artificially intelligent order processing system comprises an auditor. In an exemplary configuration, the auditor is employed to ensure the proper functioning of the artificially intelligent order processing system after training. In an embodiment, the auditor is physically located off-site from the remainder of the artificially intelligent order processing system. The auditor is optionally configured or otherwise directed to review the order to detect errors or faults, such as by comparing the processed order in real time to the audio stream, and override the other aspects or outputs of the artificially intelligent order processing system as appropriate. More specifically, the auditor in an embodiment is configured to (1) review a summary of the current order; (2) see a text of all requests made by the customer; (3) view the most recent request (e.g., “Please add fries.”), and the associated response by the natural language processor (e.g., add 1 fry to order); and (4) approve an intent, or edit, if it is not correct (e.g., The customer said “add one fry” but the artificially intelligent order processing system heard “add two fries”). In an embodiment, the auditor is configured to have the capability to switch between modes or switch the artificially intelligent order processing system off to pass control to on-site employee(s). An administrator (e.g., a manager, etc.) or auditor may switch the order system between the modes based on, for example, staffing levels, time of day, and/or customer traffic, etc.

[00024] In an embodiment, the artificially intelligent order processing system is configured to have the capability to operate in a training mode. In the training mode (a) an on-site or call center employee listens to the customer’s speech via a microphonic transmission means and keys order items into a POS system, while (b) the audio

stream is pushed to a transcription unit where the audio is converted to text and metadata tags are added to the text to add context to the converted text. In an advantageous embodiment the transcription unit is a crowd-sourced platform. As referred to herein, crowdsourcing is a process through which a task, problem or project is solved and completed through a participants that may be geographically dispersed. The artificially intelligent order processing system is configured to empower participants to listen to audio clips, segments or slices of the audio feed deriving from other aspects of the artificially intelligent order processing system, convert the audio to text and add metadata tags to enhance the context of the converted text, in an embodiment by leveraging communication and network technologies as well understood by those skilled in the art. It is envisioned that one person or participant could listen to a given clip, or a plurality of participants could listen and transcribe the same clip depending upon the desired fidelity sought. For example, three persons (or 5, 7, 9, or more) could transcribe the text and add metatags, with the consensus transcription passed to the next step or stage. The audio and converted text with tags is then used to (a) train an algorithm that can correctly transcribe audio files into text and (b) train an algorithm that can pull meaning from transcribed text (ex. Add one fry to order), both taking advantage of artificial intelligence applications (e.g., a deep neural network) to enhance the fidelity of conversion to text and pulling meaning from the customer requests.

[00025] In the auditor-assist mode the on-site employee is removed from the traditional order processing functions and serves only as a back-up to take over the artificially intelligent order processing system upon the incidence of an error or when the artificially intelligent order processing system is switched off by an administrator or auditor. The audio stream (also variously referred to as the “audio feed”) is passed from the on-site computer to both (1) a speech-to-text processor and (2) to the auditor. One part of the audio stream is transmitted to a speech-to-text converter where the audio converted to text using a speech-to-text processor (e.g., Dragon Dictation) for later processing into an order by a natural language processor. Once the order is processed by the NLP an order summary, with instruction sets, is passed to the auditor for review. The other branch of the audio stream is transmitted, as audio, to the auditor. In early stages of system implementation, one

auditor could service text from one audio stream or one business site. The auditor could compare the audio stream, either in real-time or with a slight delay, to the transcript of the order as generated by a natural language processor. In addition, rather than auditing each order, the auditor could sample the orders, thereby only looking at a subset of orders or orders meeting certain parameters. Furthermore, the auditor could audit the orders only when a trigger condition presents or the auditor could simply function to safeguard the artificially intelligent order processing system and pass control of the artificially intelligent order processing system back to the on-site employee when an error situation arises. As the artificially intelligent order processing system fidelity increases, the auditor is spread over multiple business locations or customer ordering portals, thereby facilitating a decrease in the number of auditors. An embodiment of the invention is configured such that a single auditor could service a single customer or customer portal, multiple customer portals at a single business site, three business sites, five business sites, ten business sites, or twenty or more business sites depending upon the fidelity of the artificially intelligent order processing system and the relative traffic level of the business site.

[00026] As used herein, the term “processor” is not limited merely to those integrated circuits referred to in the art as a processor, but broadly refers to a microcontroller, a microcomputer, a programmable logic controller, an application-specific integrated circuit, and any other programmable circuit.

[00027] In various embodiments, functionality for implementing the techniques of the present invention can be distributed among any number of client and/or server components. For example, in embodiments, various modules are implemented for performing various functions in connection with the present invention, and such modules can be variously implemented to run on server and/or client components.

[00028] According to various embodiments, the order processing system may include a plurality of different types of components, devices, modules, processes, systems, and the like, which, for example, may be implemented and/or instantiated via the use of hardware and/or combinations of hardware and software.

[00029] In the auditor-assist mode the transcription of the audio by the speech transcription unit is eliminated and the artificially intelligent order processing system operates

with auditor overview of the order processing system. Errors in an order detected by the auditor can be fixed and fed back into the speech-to-text and natural language processor system to increase system fidelity and ensure that errors do not propagate or multiply through the artificially intelligent order processing system. It is further contemplated that the auditor can take-over the order processing system and switch off or override the order processing by communicating electronically with the customer and inputting order items and other key data into the POS system in the event of an error detected in the artificially intelligent order processing system or at the detection of customer dissatisfaction with the order processing system. The present inventor has noted that this feature is particularly useful when there may not be sufficient on-site staff at a restaurant deploying the artificially intelligent order processing system.

[00030] In the autonomous mode the artificially intelligent order processing system functions automatically without oversight by an auditor. The artificially intelligent order processing system can employ error detection systems to detect deviations in orders or customer dissatisfaction. Such conditions can result in the artificially intelligent order processing system switching back to an auditor-assist mode or control of the order processing function passing back to the on-site employee.

[00031] Turning to the figures, FIG. 1 is an illustration of a scenario at a drive-through restaurant utilizing an order processing system where an on-site employee takes orders, receives payment and delivers food to customers. Such a system can be employed as a back-up where human intervention is required when the order-processing system according to aspects of the invention experiences a fault and needs to pass control of the artificially intelligent order processing system to an on-site employee.

[00032] In an embodiment of the invention, the artificially intelligent order processing system is configured such that the arrival of a customer **25** at an order station triggers an alert to an employee **81** or the customer **25** may make their presence known by speaking into a microphone **21**. A transaction is initiated when a speaker integrated into the artificially intelligent order processing system **22** plays an audio greeting to a customer **25** to alert the customer **25** that he has been recognized by the artificially intelligent order processing system as having arrived at the ordering

station. The audio greeting can be as simple as on-site employee **81** saying “Hello. May I take your order?” Alternatively, a pre-recorded message can be played by speaker **22** to let the customer **25** know that the on-site employee **81** will be with the customer shortly. Customer **25** then speaks into microphone **21** to request menu items or ask questions. The audio is passed from speaker **21** to a base station **80** within the restaurant. The base station **80** then wirelessly transmits the audio to a headset worn by employee **81**. The headset worn by the employee will typically have one or two earphones to transmit the audio input from the customer **25** to the on-site employee **81** and a microphone to enable the on-site employee **81** to communicate in return with the customer **25**. Speech emanating from the onsite employee **81** will enter the microphone on the headset to be transmitted to the customer using the speaker **22** at the order station. The on-site employee **81** will then manually key in the order into the on-site point of sale (POS) system **61**. The on-site POS system **61** then transmits the order to a terminal **23** having a screen at the order station for viewing and confirmation by the customer **25**. Alternatively, the onsite employee **81** reads the order back to the customer **25** for confirmation. The customer **25** then pays for the order using terminal **23** (e.g. by swiping a credit card) or the customer **25** submits payment directly to on-site employee **81**. Alternatively, if payment is made directly from the customer **25** to on-site employee **81**, then the on-site employee **81** must key payment into the on-site POS system **61**. Payment made through terminal **23** will pass automatically to the on-site POS system **61**. The on-site POS system **61** then associates payment with an order and generates a status indicator that payment has been received so that on-site employee **81** may fulfill the order by delivering the ordered food to the customer **25**. Food delivery to the customer will typically occur at a food delivery station, and not the order station, to facilitate the flow of customers through the artificially intelligent order processing system. In an embodiment, the artificially intelligent order processing system is configured such that the on-site POS system **61** is linked to a POS Relay **62** to keep track of revenue, inventory and the like.

[00033] FIG. 2 is a diagram depicting the components and the flow of data in an order processing system **10** according to aspects of an embodiment of the invention. In the artificially intelligent order processing system according to FIG. 2 the

artificially intelligent order processing system is in training mode and the on-site employee **81** is responsible for taking orders, taking payment, and delivering food to a customer **25**. However, in an embodiment, the artificially intelligent order processing system is configured the audio feed from order station microphone **21** to train the artificially intelligent order processing system **10** for future implementation and substitution of the on-site employee **81** in the order function. Accordingly, an on-site computer **31** is added to the artificially intelligent order processing system in an embodiment as depicted in FIG. 1. The on-site computer **31** is placed in the audio stream after the base station **80** to enable the artificially intelligent order processing system **10** to “listen” to audio communications occurring between a customer and an employee in that specific business (e.g. McDonalds TM, Chik-Fil-A TM or Bank of America) or business segment (e.g. drive-through restaurant, drive-up bank, pick-up window at a drug store, or payment gate for a parking lot), thus facilitating the training of a deep neural network (DNN) system (e.g. DNN **45**).

[00034] The on-site computer **31** will have an audio input component for receiving the audio generated from an order station microphone **21**. The amplified signal from the order station microphone **21** is typically about 10W. This amplified signal needs to be stepped down for the artificially intelligent order processing system **10** to listen to the audio communication from the customer through the microphone **21** to the base station **80**. The impedance of the two systems needs to be matched so the audio can be properly passed to the onsite computer **31**, so an attenuator is used to normalize the two systems. The attenuator is capable of being adjusted to address the scenario where the output from the restaurant communication system is higher or lower than expected. This facilitates the adjustment of the incoming volume to the on-site computer **31**. The onsite computer **31** is also capable of adjusting the gain to increase the volume for the input. An USB to GPIO interface, configured using software, is utilized for both input and output to the on-site computer **31**. In further implementations of the artificially intelligent order processing system, such as where audio is transmitted from the cloud, back through the on-site computer **31** and to speaker **22**, the audio signal will require amplification as it leaves the on-site computer **31**.

[00035] In an embodiment, the audio stream starting at order station microphone **21** is transmitted to the base station **80**. If the computer **31** is switched “off” then the audio stream will be transmitted only to the on-site employee **81**. If the on-site computer **31** is switched “on” then the audio stream will both be (1) transmitted to the on-site employee **81** and (2) pushed up to the cloud. The artificially intelligent order processing system is optionally configured to be switched on or off remotely or at the on-site location depending upon the needs of the business and the artificially intelligent order processing system performing the training.

[00036] Following transmission to the cloud, a first step in processing the audio feed can be slicing the feed into component transcribed text or audio clips **43**. If a sliced clip meets certain parameters, the audio clip can be passed to the transcription unit **44**, such as a crowd source platform. If the audio clip does not meet specific parameters, then the audio clip can be discarded. So, for instance, if the artificially intelligent order processing system is engaged in training to serve a fast food restaurant specializing in hamburgers, the artificially intelligent order processing system is optionally configured to produce an audio stream stating: “Wow! There are so many items to choose from. But it looks like breakfast is over? [pause] I want a cheeseburger.” The artificially intelligent order processing system optionally parse the audio stream into three components or audio clips, such as, for example: (1) “Wow! There are so many items to choose from.”; (2) “But it looks like breakfast is over?”; and (3) “I want a cheeseburger.”. The first two audio clips optionally are provided outside the set parameters and discarded, while the third audio clip of “I want a cheeseburger.” meets the parameters and is passed for transcription by a transcription unit **44** for conversion from speech to text, such as by the crowd source platform. In an embodiment of the invention, by setting parameters and discarding clips outside of the parameters, the artificially intelligent order processing system is configured to prevent the transcription unit **44** from transcribing superfluous audio.

[00037] The selected audio clip is passed to the transcription unit **44** where the audio is converted to text. The transcription unit can be a crowd source platform where individuals listen to the audio clip and manually convert the audio to text in the form of a “transcribed clip.” In addition, metadata tags are optionally added to the

transcribed clip text to provide additional context for the audio clip. For example, frustration levels in the customers voice, the approximate age of the customer, the approximate gender of the customer and the approximate demographics of the customer. A metatag is optionally associated with the transcribed text and audio clip, optionally by participants in the crowd source platform, when transcribed that would include this metadata gleaned from the audio clip. In this manner, the artificially intelligent order processing system is configured to utilize the crowd source platform to sanitize and validate the data. In a specific configuration, the artificially intelligent order processing system utilizes humans to transcribe the audio clips in the initial or training phase to increase the fidelity of the artificially intelligent order processing system over that achieved when the artificially intelligent order processing system is configured to utilize machine-based speech-to-text processors.

[00038] The audio, text, and metadata from the audio clips are then transmitted from the transcription unit **44** to a Deep Neural Network **45** (DNN), where they are used to develop a Speech-to-Text System **41**. Such transmission is intended to provide the ability to approximately detect frustration levels, age, gender and demographics of future customers. The DNN receives the audio, text and metadata and runs specific training programs on each of these items. The artificially intelligent order processing system in an embodiment is configured to utilize the audio to build a pattern recognition program constituting a speech-to-text module. Thus, when the artificially intelligent order processing system or speech-to-text module element encounters an audio clip in a live environment, the artificially intelligent order processing system or speech-to-text module element can quickly relate the audio clip to other audio clips encountered during training, and then cross-reference the accompanying text with those audio clips. In this manner, the speech-to-text converter infers the text from the audio based on comparison of the new live audio with the past training audio.

[00039] A Speech-to-Text System **41** will be able to take subsequent clips or audio streams from a customer and associate them with prior patterns to determine whether the utterance resulting in the audio conforms to a set of words, instructions, questions, etc. thereby identifying the spoken words that were transmitted.

- [00040] In embodiments of the invention, artificial intelligence, such as that developed within the DNN in accordance with the mechanisms described herein, is leveraged to enhance the recognition of words or phrases. In a similar fashion, machine learning is intimately connected into the artificial intelligence. In embodiments of the invention, as the artificial intelligence begins to build a database of information about customers, their preferences, common questions, and requests, the artificially intelligent order processing system builds upon its existing knowledge base in order to provide new and unique ways of responding to future users who have similar requests and needs. Users are also able to enhance the internal machine learning capabilities of the artificially intelligent order processing system through voice and text inputs to expand the artificially intelligent order processing systems knowledge base in accordance with teachings of the invention.
- [00041] Embodiments of the invention incorporate speech-based training algorithms. Such speech-based training algorithms involve the process of using spoken language to provide feedback to an artificially intelligent software application. This feedback in a embodiments is used in a configuration of the artificially intelligent order processing system to modify the responses the artificial intelligence program would give responsive to a customer request or order item.
- [00042] An embodiment of the artificially intelligent order processing system is configured such that the transcribed text from the audio clips are then transmitted from the Speech-to-Text System **41** to a Natural Language Processor **51**, also employing a Deep Neural Network **45**, where meaning is pulled from, or assigned to, the speech following its recognition by the Speech-to-Text System **41**. In the initial training stage the audio, text, and metadata from the clips are transmitted from the Natural Language Processor **51** to a storage device **55** for future access. In an embodiment, storing data facilitates tasks including re-testing the artificially intelligent order processing system, such as in instances where the artificially intelligent order processing system encounters difficulty in the identification of certain, words, phrases or tones.
- [00043] Referring back to the order station, in certain embodiments the order panel comprises an automated, self-service payment acceptor. The payment acceptor optionally comprises a magnetic strip card reader or chip reader (e.g., employing

the EMV standard) for credit cards, debit cards, EBT cards and other types of widely used cards which utilize a magnetic strip or chip. In an embodiment, the payment acceptor further comprises mobile payment options like Android or Apple Pay. Additionally, the payment acceptor is optionally configured to utilize distinguishing factors of a user, such as distinguishing factors derived from facial recognition, to connect a user with a stored payment account for automatically making payment after the order has been placed.

[00044] In an embodiment, the artificially intelligent order processing system is configured to communicatively connect with a restaurant such that if the customer **25** has a mobile payment account setup with the restaurant, the receipt for the order is sent to the customer's device as a record of their transaction.

[00045] The training system in an embodiment is configured to capture the language necessary to operate the artificially intelligent order processing system and associate the language with menu items and requests for service as required to apply in a drive-up restaurant environment. In the training phase the artificially intelligent order processing system will generally not be operable to process orders, but will piggy-back on the work of employees performing restaurant functions including audibly capturing order instructions, converting those audible instructions to input data for the point of sale system, and confirming that an order has been captured correctly for further preparation and payment collection.

[00046] FIG. 3 is a diagram depicting the components and the flow of data in an order processing system **10** according to additional aspects of the invention. In the artificially intelligent order processing system according to FIG. 3 an auditor **71** is added to the artificially intelligent order processing system to ensure the fidelity of the order process and recognition of speech by the artificially intelligent order processing system **10**. The artificially intelligent order processing system depicted in FIG. 3 also shows the artificially intelligent order processing system **10** taking over the order processing function from the on-site employee **81**.

[00047] As in the training example in FIG. 2, in the artificially intelligent order processing system depicted in FIG. 3 the audio stream that starts at the order station microphone **21** is transmitted to the base station **80** and then the on-site computer

31. If the computer **31** is switched “off” then the audio stream will be transmitted only to the on-site restaurant base station. If the computer **31** is switched “on” then the audio stream will both be (1) transmitted to the on-site restaurant base station and (2) transmitted to the cloud **14**. It is contemplated that the artificially intelligent order processing system **10** can be switched on or off remotely or at the on-site location depending upon the needs of the business and the artificially intelligent order processing system performing the training. The on-site employee **81** in an embodiment is still be responsible for taking payment, and delivering food to a customer **25**, although these functions are not depicted in FIG. 3.

[00048] Following transmission to the cloud **14**, in a configuration of the artificially intelligent order processing system, the first step in processing the audio stream comprises running the audio stream through the trained speech-to-text module **41** created in the training phase, such as in the process presented in FIG. 2. The audio stream from the on-site computer **31** is also optionally transmitted to an auditor **71**, who is able to listen to the audio of the order. The speech-to-text converter **41** outputs the transcribed text in its entirety, to a natural language processor (NLP) **51**.

[00049] In an embodiment, artificially intelligent order processing system further comprises a natural language processor (NLP) **51**. The NLP **51** pulls meaning out of the text. In an example, when the text comprises “I want a cheeseburger.”, or some similar statement, is sent to the NLP **51**, an instruction set adding one cheeseburger to the order is generated, representing the intent of the order. This order, with an order summary in text form (e.g., the order intent– ex. “add one cheeseburger”), is passed to the auditor **71** for comparison with the audio feed that was passed to the auditor **71** from the on-site computer **31**. If the order generated by the NLP **51** is correct, then the auditor **71** approves the submitted intent from the NLP **51**, then the artificially intelligent order processing system passes the instructions to the business processor **52** and the audio and accompanying order intent is stored in a storage medium **55**. If the auditor **71** detects that the artificially intelligent order processing system **10** is not functioning properly, or that the customer **25** is frustrated or otherwise not being adequately served by the artificially intelligent order processing system **10**, then the auditor **71** can abort, or intervene in, the transaction and pass control back to the on-site employee **81**, such as by sending a

notification to the employee **81**, including a possible description of the problem or error. The auditor **71** can also remotely switch off the on-site computer **31**, to allow on-site employees **81** to take control of order processing.

[00050] An embodiment of the artificially intelligent order processing system comprises a business processor **52**. The business processor **52** is where business logic operations are performed. For example, if the customer **25** ordered a cheeseburger, the instruction set for the business processor would be to output the text “would you like fries and a drink with that?” The text would be sent to text-to-speech module **42** and then the on-site computer **31**, which will output the audio to the base station **80** and then out to the speaker **22**. Simultaneously, the business processor will send the original intent of ‘add one cheeseburger’ to the POS Relay **62**, which would send the order down to the onsite point of sale system **61**.

[00051] An embodiment of the artificially intelligent order processing system is configured to promote sales. An additional feature of the proposed systems is its ability to effectively promote sales in a manner analogous a human cashier. Customers interacting with fast food employees are well-accustomed to the standard up-selling phrase “would you like to make it a combo?” The present inventor has recognized that this particular phrase and variants are used so commonly because it is effective in increasing sales, and thereby is a teaching of an embodiment of the system. The present inventor has further recognized that any new system must be able to provide such promotional features as effectively as a human cashier, and thereby is a teaching of an embodiment of the system. According to an embodiment, the artificially intelligent order processing system is configured to offer additional items that are frequently purchased together or based upon promotions at the business. For example, if the customer orders an item that is also sold as part of a “combo” with additional menu options, the artificially intelligent order processing system could prompt the customer and inform the customer what combos are available for purchase. In addition, by way of example, if bacon or cheese is frequently added to an order, the artificially intelligent order processing system could prompt the customer by asking them if they would like to add that item to their order. In a similar manner, and in conjunction with technology currently available to recognize the identity of a customer and track their preferences with

regard to past orders, the artificially intelligent order processing system could query the customer to determine if those past selections should be added to their current order.

[00052] FIG. 4 is a diagram depicting the components and the flow of data in an order processing system **10** according to additional aspects of an embodiment. In the artificially intelligent order processing system according to FIG. 4 the artificially intelligent order processing system **10** is largely operating autonomously and the auditor is present predominately to provide exception handling when the artificially intelligent order processing system is not functioning properly. In the autonomous mode the artificially intelligent order processing system functions automatically without direct and continuous oversight by an auditor. The artificially intelligent order processing system can employ automatic error detection systems to detect deviations in orders or customer dissatisfaction. Such conditions can result in the artificially intelligent order processing system switching back to an auditor-assist mode or control of the order processing function passing back to the on-site employee.

[00053] A point-of-sale commercial transaction processing system **62** based on cloud computing and intelligent analysis, particularly suitable for the fast food industry, constitutes a teaching of an embodiment of the invention. The transaction processing system utilizes an order terminal having an audio speaker, a microphone, and preferably a video display, a computer system in communication with the order terminal and running artificial intelligence routines to process or pre-process verbal requests provided into the microphone of the order terminal, and a human-controlled response system, or auditor, which completes, corrects or verifies requests that cannot be satisfactorily completed by the artificial intelligence routines alone. The auditor is preferably in communication with the order terminal or (and the customer) via a high-speed voice over internet protocol (VoIP) or data connection. The order terminal may further include payment terminals, touch screens, and other hardware and software options to facilitate the receipt of payment by the customer.

[00054] Various techniques have been described in detail above with reference to a few example embodiments thereof as illustrated in the accompanying drawings. In the

preceding description, numerous specific details are set forth in order to provide a thorough understanding of one or more aspects and/or features described or reference herein. It will be apparent, however, to one skilled in the art, that one or more aspects and/or features described or referenced herein may be practiced without some or all of these specific details. In other instances, well known process steps and/or structures have not been described in detail in order to not obscure some of the aspects and/or features described or reference herein.

[00055] One or more different inventions may be described in the present application. Further, for one or more of the invention(s) described herein, numerous embodiments may be described in this patent application, and are presented for illustrative purposes only. The described embodiments are not intended to be limiting in any sense. One or more of the invention(s) may be widely applicable to numerous embodiments, as is readily apparent from the disclosure. These embodiments are described in sufficient detail to enable those skilled in the art to practice one or more of the invention(s), and it is to be understood that other embodiments may be utilized and that structural, logical, software, electrical and other changes may be made without departing from the scope of the one or more of the invention(s). Accordingly, those skilled in the art will recognize that the one or more of the invention(s) may be practiced with various modifications and alterations. Particular features of one or more of the invention(s) may be described with reference to one or more particular embodiments or figures that form a part of the present disclosure, and in which are shown, by way of illustration, specific embodiments of one or more of the invention(s). It should be understood, however, that such features are not limited to usage in the one or more particular embodiments or figures with reference to which they are described. The present disclosure is neither a literal description of all embodiments of one or more of the invention(s) nor a listing of features of one or more of the invention(s) that must be present in all embodiments.

[00056] Headings of sections provided in this patent application and the title of this patent application are for convenience only, and are not to be taken as limiting the disclosure in any way.

- [00057] Devices that are in communication with each other need not be in continuous communication with each other, unless expressly specified otherwise. In addition, devices that are in communication with each other may communicate directly or indirectly through one or more intermediaries.
- [00058] A description of an embodiment with several components in communication with each other does not imply that all such components are required. To the contrary, a variety of optional components are described to illustrate the wide variety of possible embodiments of one or more of the invention(s).
- [00059] Further, although process steps, method steps, algorithms or the like may be described in a sequential order, such processes, methods and algorithms may be configured to work in alternate orders. In other words, any sequence or order of steps that may be described in this patent application does not, in and of itself, indicate a requirement that the steps be performed in that order. The steps of described processes may be performed in any order practical. Further, some steps may be performed simultaneously despite being described or implied as occurring non-simultaneously (e.g., because one step is described after the other step). Moreover, the illustration of a process by its depiction in a drawing does not imply that the illustrated process is exclusive of other variations and modifications thereto, does not imply that the illustrated process or any of its steps are necessary to one or more of the invention(s), and does not imply that the illustrated process is preferred.
- [00060] When a single device or article is described, it will be readily apparent that more than one device/article (whether or not they cooperate) may be used in place of a single device/article. Similarly, where more than one device or article is described (whether or not they cooperate), it will be readily apparent that a single device/article may be used in place of the more than one device or article.
- [00061] The functionality and/or the features of a device may be alternatively embodied by one or more other devices that are not explicitly described as having such functionality/features. Thus, other embodiments of one or more of the invention(s) need not include the device itself.

- [00062] Techniques and mechanisms described or reference herein will sometimes be described in singular form for clarity. However, it should be noted that particular embodiments include multiple iterations of a technique or multiple instantiations of a mechanism unless noted otherwise.
- [00063] The present invention has been described in particular detail with respect to possible embodiments. Those of skill in the art will appreciate that the invention may be practiced in other embodiments. First, the particular naming of the components, capitalization of terms, the attributes, data structures, or any other programming or structural aspect is not mandatory or significant, and the mechanisms that implement the invention or its features may have different names, formats, or protocols. Further, the artificially intelligent order processing system may be implemented via a combination of hardware and software, as described, or entirely in hardware elements, or entirely in software elements. Also, the particular division of functionality between the various system components described herein is merely exemplary, and not mandatory; functions performed by a single system component may instead be performed by multiple components, and functions performed by multiple components may instead be performed by a single component.
- [00064] In various embodiments, the present invention can be implemented as a system or a method for performing the above-described techniques, either singly or in any combination. In another embodiment, the present invention can be implemented as a computer program product comprising a nontransitory computer-readable storage medium and computer program code, encoded on the medium, for causing a processor in a computing device or other electronic device to perform the above-described techniques.
- [00065] Reference in the specification to “one embodiment” or to “an embodiment” means that a particular feature, structure, or characteristic described in connection with the embodiments is included in at least one embodiment of the invention. The appearances of the phrase “in one embodiment” in various places in the specification are not necessarily all referring to the same embodiment.

[00066] Some portions of the above are presented in terms of algorithms and symbolic representations of operations on data bits within a memory of a computing device. These algorithmic descriptions and representations are the means used by those skilled in the data processing arts to most effectively convey the substance of their work to others skilled in the art. An algorithm is here, and generally, conceived to be a self-consistent sequence of steps (instructions) leading to a desired result. The steps are those requiring physical manipulations of physical quantities. Usually, though not necessarily, these quantities take the form of electrical, magnetic or optical signals capable of being stored, transferred, combined, compared and otherwise manipulated. It is convenient at times, principally for reasons of common usage, to refer to these signals as bits, values, elements, symbols, characters, terms, numbers, or the like. Furthermore, it is also convenient at times, to refer to certain arrangements of steps requiring physical manipulations of physical quantities as modules or code devices, without loss of generality.

[00067] It should be borne in mind, however, that all of these and similar terms are to be associated with the appropriate physical quantities and are merely convenient labels applied to these quantities. Unless specifically stated otherwise as apparent from the following discussion, it is appreciated that throughout the description, discussions utilizing terms such as “processing” or “computing” or “calculating” or “displaying” or “determining” or the like, refer to the action and processes of a computer system, or similar electronic computing module and/or device, that manipulates and transforms data represented as physical (electronic) quantities within the computer system memories or registers or other such information storage, transmission or display devices.

[00068] Certain aspects of the present invention include process steps and instructions described herein in the form of an algorithm. It should be noted that the process steps and instructions of the present invention can be embodied in software, firmware and/or hardware, and when embodied in software, can be downloaded to reside on and be operated from different platforms used by a variety of operating systems.

[00069] The present invention also relates to an apparatus for performing the operations herein. This apparatus may be specially constructed for the required purposes, or it

may comprise a general-purpose computing device selectively activated or reconfigured by a computer program stored in the computing device. Such a computer program may be stored in a computer readable storage medium, such as, but is not limited to, any type of disk including floppy disks, optical disks, CD-ROMs, magnetic-optical disks, read-only memories (ROMs), random access memories (RAMs), EPROMs, EEPROMs, magnetic or optical cards, application specific integrated circuits (ASICs), or any type of media suitable for storing electronic instructions, and each coupled to a computer system bus. Further, the computing devices referred to herein may include a single processor or may be architectures employing multiple processor designs for increased computing capability.

[00070] The algorithms and displays presented herein are not inherently related to any particular computing device, virtualized system, or other apparatus. Various general-purpose systems may also be used with programs in accordance with the teachings herein, or it may prove convenient to construct more specialized apparatus to perform the required method steps. The required structure for a variety of these systems will be apparent from the description provided herein. In addition, the present invention is not described with reference to any particular programming language. It will be appreciated that a variety of programming languages may be used to implement the teachings of the present invention as described herein, and any references above to specific languages are provided for disclosure of enablement and best mode of the present invention.

[00071] While the invention has been described with respect to a limited number of embodiments, those skilled in the art, having benefit of the above description, will appreciate that other embodiments may be devised which do not depart from the scope of the present invention as described herein. In addition, it should be noted that the language used in the specification has been principally selected for readability and instructional purposes, and may not have been selected to delineate or circumscribe the inventive subject matter. Accordingly, the disclosure of the present invention is intended to be illustrative, but not limiting, of the scope of the invention, which is set forth in the claims.

[00072] All references cited in the present application are incorporated in their entirety herein by reference to the extent not inconsistent herewith.

[00073] It will be seen that the advantages set forth above, and those made apparent from the foregoing description, are efficiently attained and since certain changes may be made in the above construction without departing from the scope of the invention, it is intended that all matters contained in the foregoing description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

[00074] It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween. Now that the invention has been described,

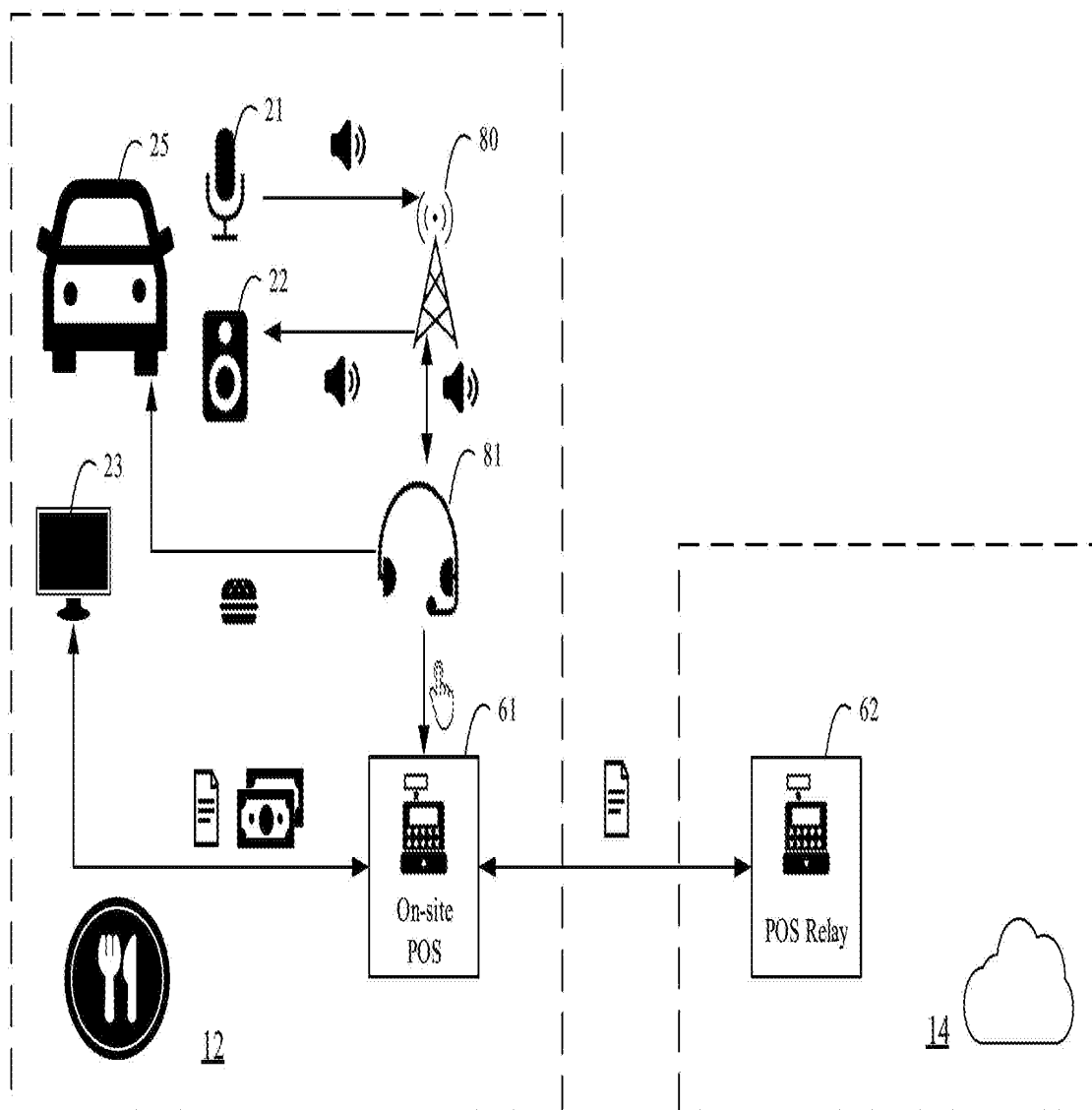


FIG. 1

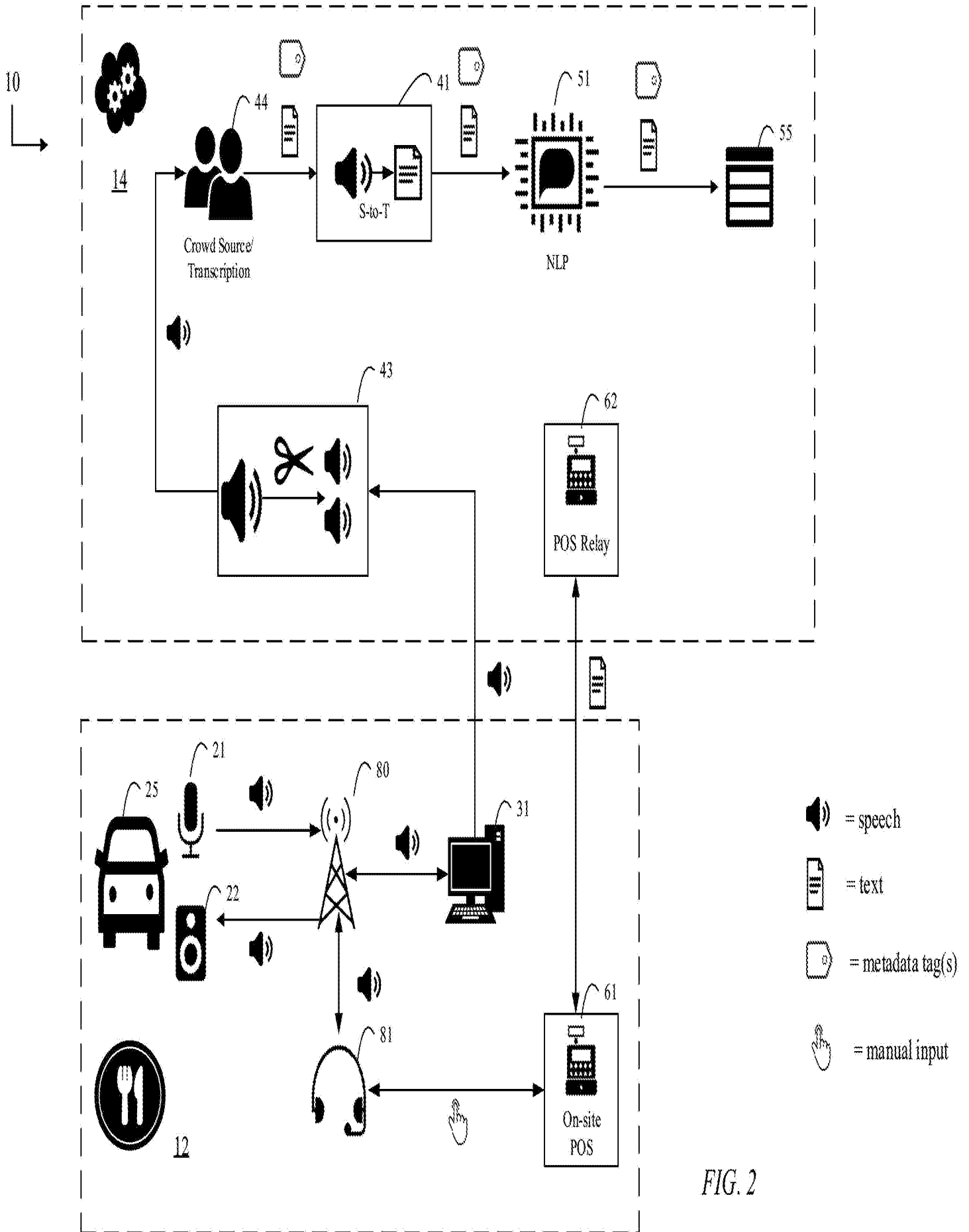


FIG. 2

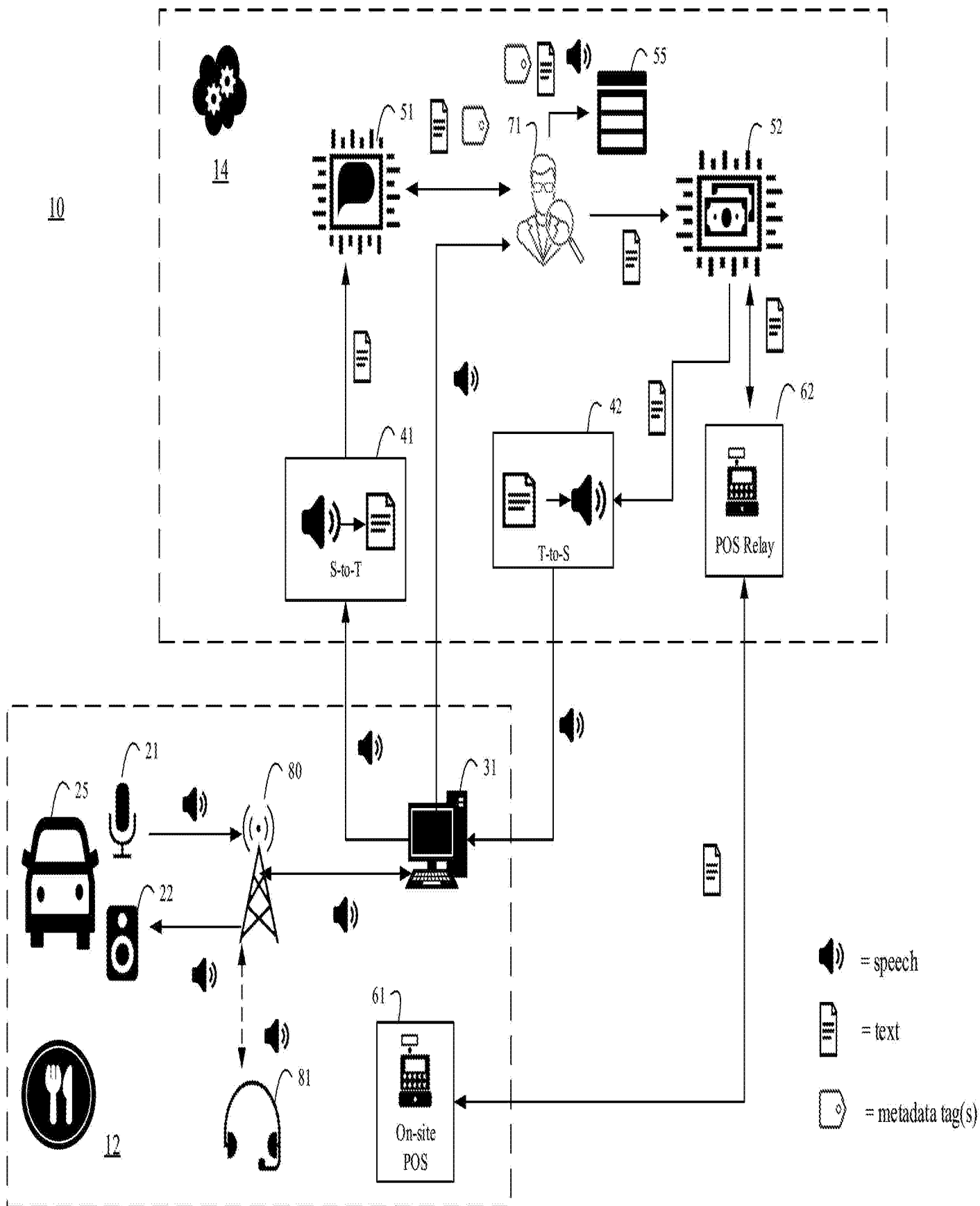


FIG. 3

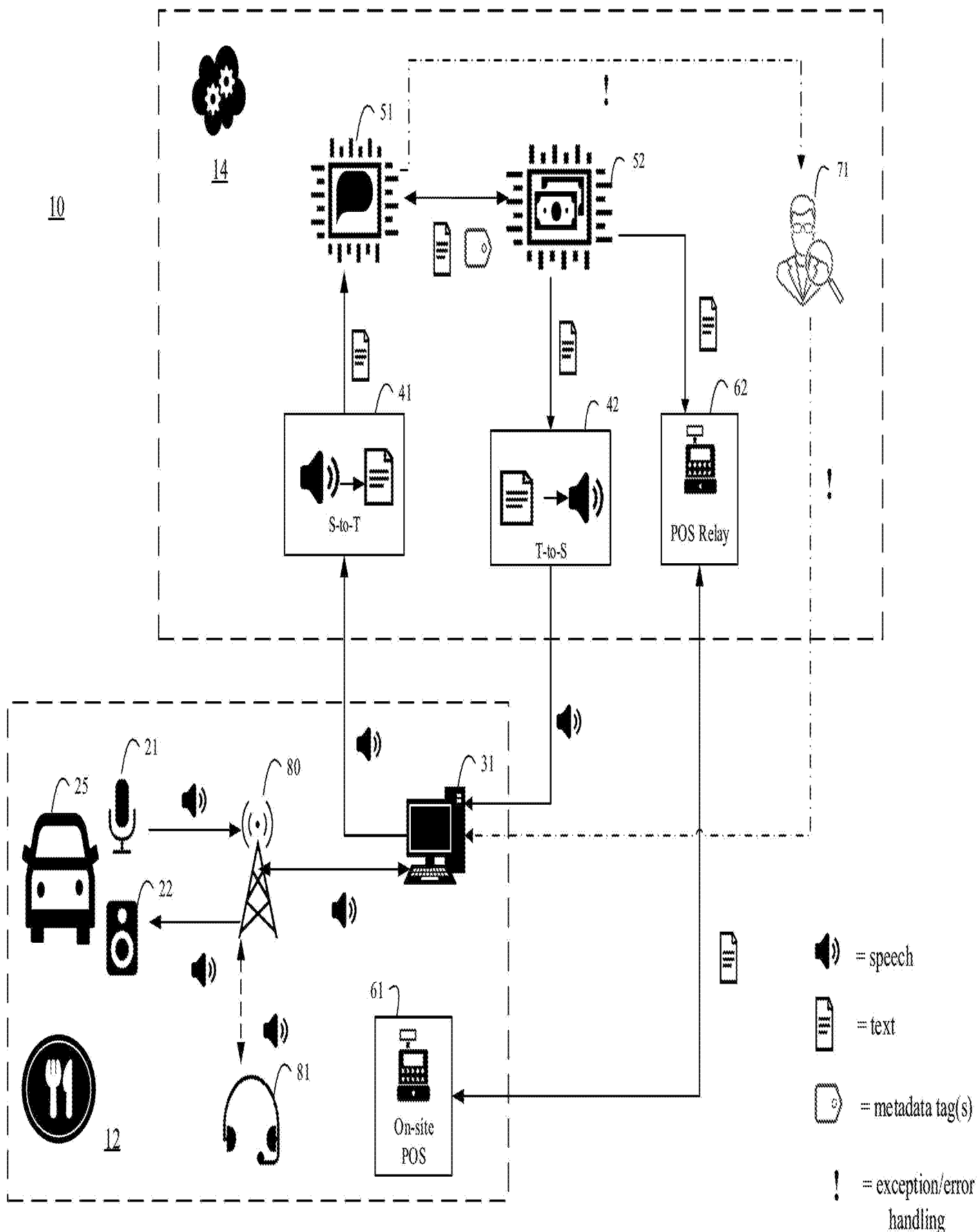


FIG. 4

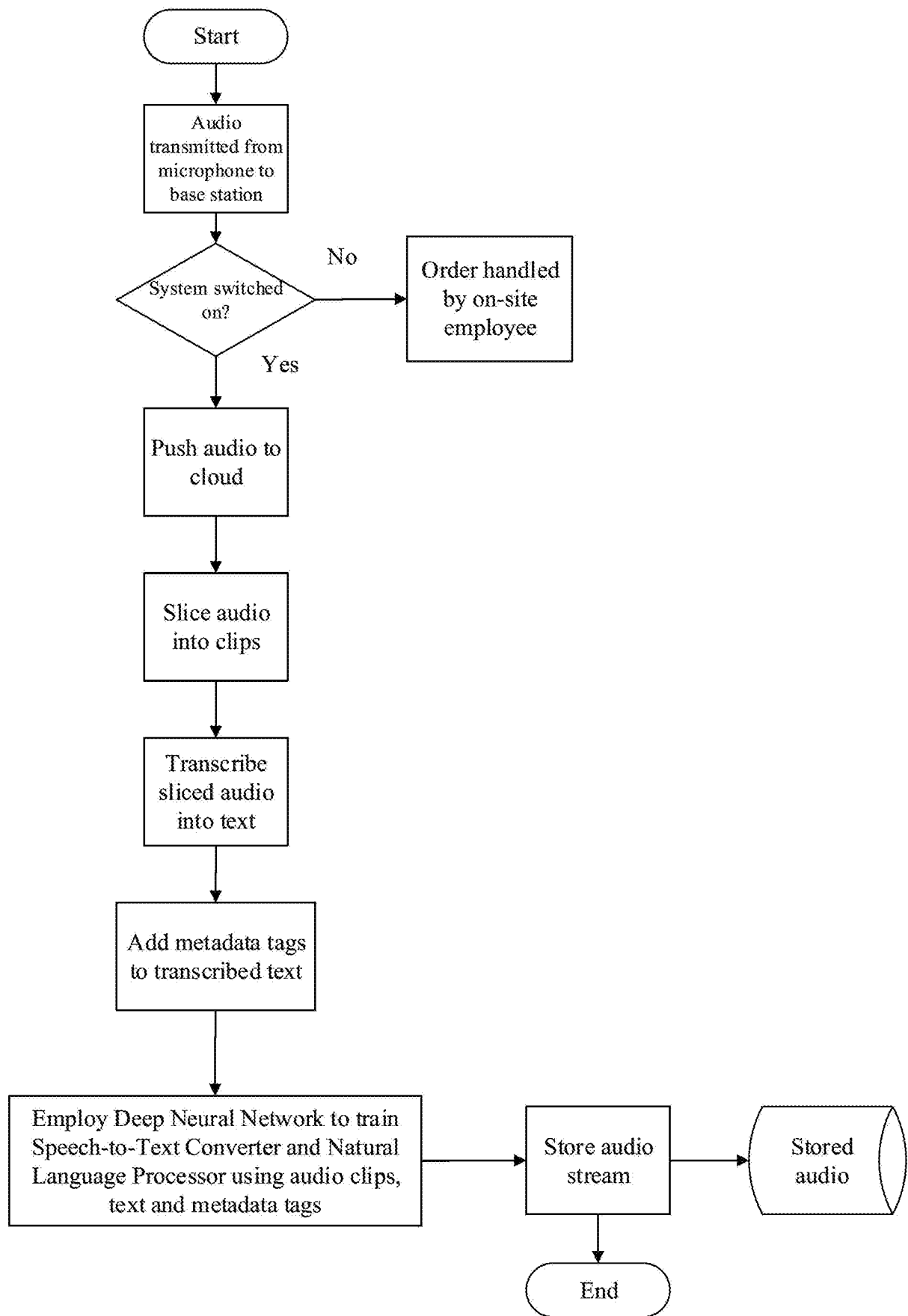


FIG. 5

10

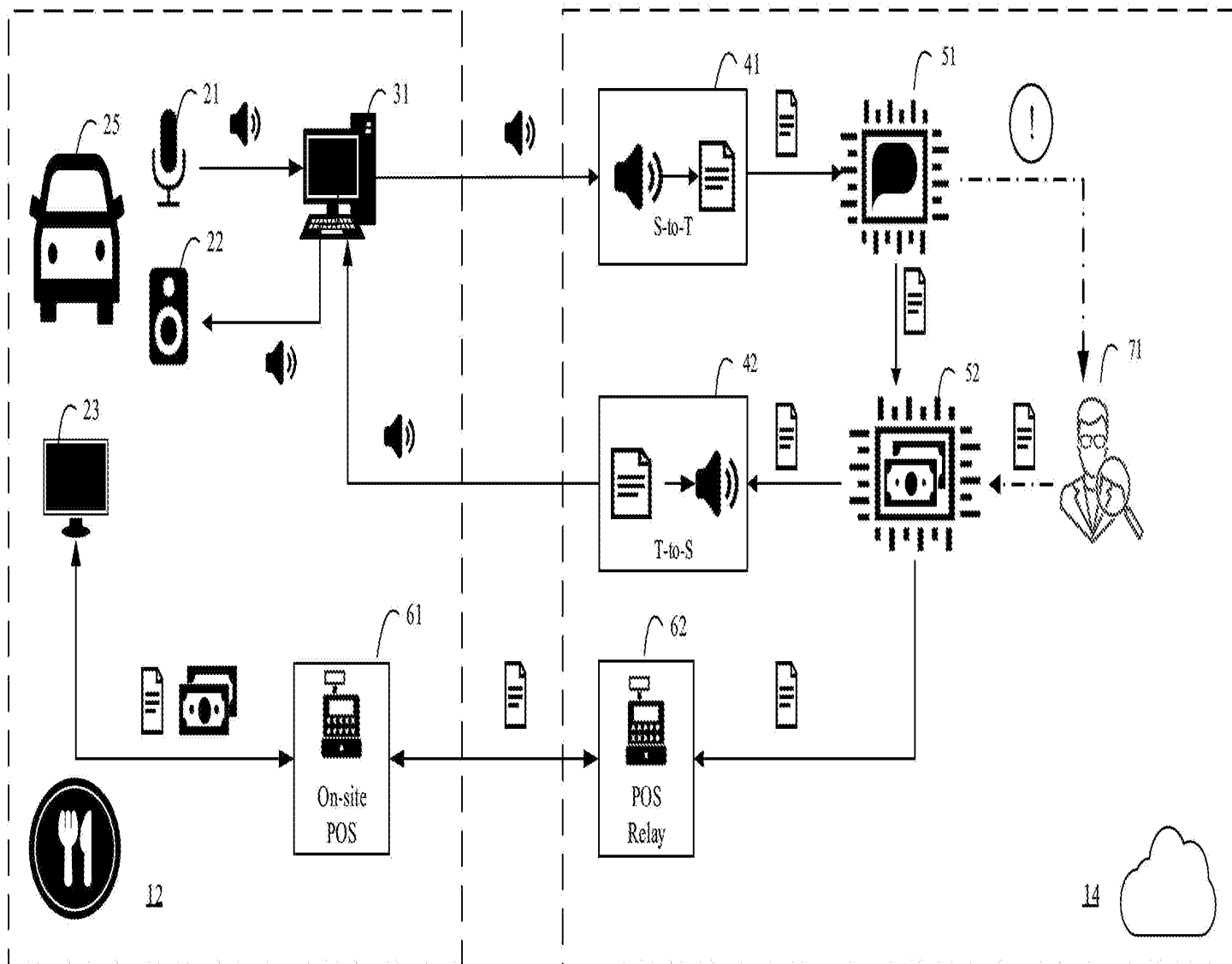


FIG. 6

! = exception handling.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

**Title of
Invention**

ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM

As the below named inventor, I hereby declare that:

This declaration is directed to: ☒ The attached application, or

☐ United States application or PCT international application number _____
filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Robley Theron Carpenter III Date (Optional) : _____

Signature: Rob Carpenter

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Alexandria, VA 22313
	)	
Robley Theron Carpenter III	)	Group Art Unit
	)	
Serial No.	)	Confirmation No.
	)	
Filed: February 12, 2019	)	Examiner:
	)	
Atty. File No. 1397-4-NP	)	
	)	
Entitled: ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM	)	<u>INFORMATION DISCLOSURE</u> <u>STATEMENT TRANSMITTAL</u> <u>LETTER</u>

Commissioner for Patents
P.O. Box 1450

Electronically Submitted

Dear Commissioner:

The references cited on attached Form PTO/SB08 being called to the attention of the Examiner.

- ☒ Copies of the cited non-patent and/or foreign references are enclosed herewith.
- ☐ Copies of the cited U.S. patents and/or patent applications are enclosed herewith.
- ☒ Copies of the cited U.S. patents/patent application publications were not enclosed in accordance with 37 C.F.R. § 1.98(a).
- ☐ Copies of the cited references are not enclosed, in accordance with 37 C.F.R. § 1.98(d), because the references were cited by or submitted to the U.S. Patent and Trademark Office in prior application Serial No. _____ filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120.
- ☐ To the best of applicants' belief, the pertinence of the foreign-language references is believed to be summarized in the attached English abstracts and/or in the figures, although applicants do not necessarily vouch for the accuracy of the translation.
- ☐ Examiner's attention is drawn to the following related applications:

Serial No. _____ filed _____ (Attorney Ref. No. _____)

Serial No. _____ filed _____ (Attorney Ref. No. _____)

☐ Other: _____

Submission of the above information is not intended as an admission that any item is citable under the status or rules to support a rejection, that any item disclosed represents analogous art, or that those skilled in the art would refer to or recognize the pertinence of any reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references made of record therein. No fee is believed due in connection with this submission, because the Information Disclosure Statement submitted herewith before the later of: within 3 months of filing, or before the mailing of a first Office action on the merits.. However, if it is determined that any fees are due, the Commissioner is hereby authorized to charge such fees to Deposit Account 506750.

FEES

☒	37 CFR 1.97(b): No fee is believed due in connection with this submission, because the information disclosure statement submitted on the date of filing is satisfied by one of the following conditions (“X” indicates satisfaction): ☒ Within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d), or ☐ Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application, or ☐ Before the mailing date of a first Office Action on the merits, or ☐ Before the mailing of a first Office action after the filing of a request for continued examination under 37 CFR 1.114.
☐	37 CFR 1.97(c): The information disclosure statement transmitted herewith is being filed after all the above conditions (37 CFR 1.97(b)), but before the mailing date of any one of the following conditions: (1) a final action under 37 C.F.R. 1.113, or (2) a notice of allowance under 37 C.F.R. 1.113, or (3) an action that otherwise closes prosecution in the application. This information Disclosure Statement is accompanied by: ☐ A Certification (below) as specified by 37 C.F.R. 1.97(c). OR ☐ A \$120.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement.
☐	37 CFR 1.97(d): This Information Disclosure Statement is being submitted after the period specified in 37 CFR 1.197(c). ☐ This information Disclosure Statement includes a Certification (below) as specified by 37 C.F.R. 1.97(c) AND ☐ Applications hereby requests consideration of the reference(s) disclosed herein. The fee in the amount of \$120.00 under 37 C.F.R. 1.17(p) is submitted herewith. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

Certification (37 C.F.R. 1.97(e))
(Applicable only if checked)

- ☐ The undersigned certifies that:
- ☐ Each item of information contained in the Information Disclosure Statement submitted herewith was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(1).
 - ☐ A copy of the communication from the foreign patent office is enclosed.

OR

- ☐ No item of information contained in the Information Disclosure Statement submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(2).

Respectfully submitted,

Rocky Mountain Patent, LLC

By: /jrs/
Jeffrey R. Schell
Registration No. 71,546
1800 Wazee St., Suite 300
Denver, CO 80202
(888) 461- 4443

Date: February 12, 19

PETITION TO MAKE SPECIAL UNDER ACCELERATED EXAMINATION PROGRAM

Attorney Docket Number	1397-4-NP	First Named Inventor	Robley Theron Carpenter III
Application Number (if Known)			
Title of Invention	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM		

APPLICANT HEREBY PETITIONS TO MAKE THE ABOVE-IDENTIFIED APPLICATION SPECIAL UNDER THE REVISED ACCELERATED EXAMINATION PROGRAM. See Instruction sheet on page 3.

1.	Claims of the application: a. The application must contain three (3) or fewer independent claims and twenty (20) or fewer total claims. The application may not contain any multiple dependent claims. b. Applicant hereby agrees not to separately argue the patentability of any dependent claim during any appeal in the application. Specifically, the applicant agrees that the dependent claims will be grouped together with and not argued separately from the independent claim from which they depend in any appeal brief filed in the application (37 CFR 41.37(c)(1)(vii)). c. The claims must be directed to a single invention.
2.	Interviews: Applicant hereby agrees to have (if requested by examiner): a. An interview (including an interview before a first Office action) to discuss the prior art and any potential rejections or objections with the intention of clarifying and possibly resolving all issues with respect to patentability at that time, and b. A telephonic interview to make an election without traverse if the Office determines that the claims are not obviously directed to a single invention.
3.	Preexamination Search Statement and Accelerated Examination Support Document: With this petition, applicant is providing: a preexamination search statement, in compliance with the requirements set forth in item 8 of the instruction sheet, and an "accelerated examination support document" that includes: a. An information disclosure statement in compliance with 37 CFR 1.98 citing each reference deemed most closely related to the subject matter of each of the claims; b. For each reference cited, an identification of all the limitations of the claims that are disclosed by the reference specifying where the limitation is disclosed in the cited reference; c. A detailed explanation of how each of the claims are patentable over the references cited with the particularity required by 37 CFR 1.111(b) and (c); d. A concise statement of the utility of the invention as defined in each of the independent claims (unless the application is a design application); e. An identification of any cited references that may be disqualified as prior art under 35 U.S.C. 103(c) as amended by the CREATE act; and f. A showing of where each limitation of the claims finds support under the first paragraph of 35 U.S.C. 112 in the written description of the specification. If applicable, the showing must also identify: (1) each means- (or step-) plus-function claim element that invokes consideration under 35 U.S.C. 112, ¶6; and (2) the structure, material, or acts that correspond to any means- (or step-) plus-function claim element that invokes consideration under 35 U.S.C. 112, ¶6. If the application claims the benefit of one or more applications under title 35, United States Code, the showing must also include where each limitation of the claims finds support under the first paragraph of 35 U.S.C. 112 in each such application in which such support exists.

PETITION TO MAKE SPECIAL UNDER ACCELERATED EXAMINATION PROGRAM (Continued)

Attorney Docket Number	1397-4-NP	First Named Inventor	Robley Theron Carpenter III
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Attachments:

a.		Accelerated Examination Support Document (see item 3 above).
b.		A statement, in compliance with the requirements set forth in item 8 of the instruction sheet, detailing the preexamination search which was conducted.
c.		Information Disclosure Statement.
d.	☐	Other (e.g., a statement that the claimed subject matter is directed to environmental quality, energy, or countering terrorism (37 CFR 1.102(c)(2)).

Fees: The following fees must be filed electronically via EFS or EFS-Web:

a.	The basic filing fee, search fee, examination fee, and application size fee (if required) under 37 CFR 1.16.
b.	Petition fee under 37 CFR 1.17(h) - unless the petition is filed with a showing under 37 CFR 1.102(c)(2).

Signature:

Click Remove if you wish to remove this signatory

Remove

Signature	/JRS/	Date	2019-02-12
Name (Print/Typed)	Jeffrey R. Schell	Registration Number	71546

Click Add if you wish to add additional signatory

Add

Note: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.

Instruction Sheet Petition to Make Special Under the Accelerated Examination

A grantable petition must meet the following conditions:

1. The petition to make special under the accelerated examination program must be filed with the application and accompanied by the fee set forth in 37 CFR 1.17(h) or a statement that the claimed subject matter is directed to environmental quality, energy, or countering terrorism.
2. The application must be a non-reissue utility or design application filed under 35 U.S.C. 111(a).
3. The application must be filed electronically using the Office electronic filing system (EFS) or EFS-Web.
4. The application must be complete under 37 CFR 1.51 and in condition for examination on filing. For example, the application must be filed together with the basic filing fee, search fee, examination fee, and application size fee (if applicable), and an oath or declaration under 37 CFR 1.63.
5. The application must contain three (3) or fewer independent claims and twenty (20) or fewer total claims. The application may not contain any multiple dependent claims. The petition must include a statement that **applicant will agree not to separately argue the patentability of any dependent claim during any appeal** in the application. Specifically, the applicant is agreeing that the dependent claims will be grouped together with and not argued separately from the independent claim from which they depend in any appeal brief filed in the application (37 CFR 41.37(c)(1)(vii)).
6. The claims must be directed to a **single invention**. The petition must include a statement that applicant will agree to have a telephonic interview to make an election without traverse in a telephonic interview if the Office determines that all the claims are not directed to a single invention.
7. The petition must include a statement that **applicant will agree** to have an interview (including an interview before a first Office action) to discuss the prior art and any potential rejections or objections with the intention of clarifying and possibly resolving all issues with respect to patentability at that time.
8. At the time of filing, applicant must provide a statement that a **preexamination search was conducted**, including an identification of the field of search by United States class and subclass and the date of the search, where applicable, and, for database searches, the search logic or chemical structure or sequence used as a query, the name of the file or files searched and the database service, and the date of the search.
 - a. This preexamination search must involve U.S. patents and patent application publications, foreign patent documents, and nonpatent literature, unless the applicant can justify with reasonable certainty that no references more pertinent than those already identified are likely to be found in the eliminated source and includes such a justification with this statement.
 - b. This preexamination search must be directed to the claimed invention and encompass all of the features of the independent claims, giving the claims the broadest reasonable interpretation.
 - c. The preexamination search must also encompass the disclosed features that may be claimed, in that an amendment to the claims (including any new claim) that is not encompassed by the preexamination search will be treated as non-responsive and will not be entered.
 - d. A search report from a foreign patent office will not be accepted unless the search report satisfies the requirements set forth above.
 - e. Any statement in support of a petition to make special must be based on a good faith belief that the preexamination search was conducted in compliance with these requirements. See 37 CFR 1.56 and 10.18.
9. At the time of filing, applicant must provide in support of the petition an **accelerated examination support document that includes:**
 - a. An **information disclosure statement** in compliance with 37 CFR 1.98 citing each reference deemed most closely related to the subject matter of each of the claims;
 - b. For each reference cited, an **identification of all the limitations of the claims** that are disclosed by the reference specifying where the limitation is disclosed in the cited reference;
 - c. A **detailed explanation of how each of the claims are patentable** over the references cited with the particularity required by 37 CFR 1.111(b) and (c);
 - d. A concise **statement of the utility** of the invention as defined in each of the independent claims (unless the application is a design application);
 - e. An identification of any cited references that may be disqualified as prior art under 35 U.S.C. 103(c) as amended by the CREATE act; and
 - f. A **showing of where each limitation of the claims finds support under the first paragraph of 35 U.S.C. 112** in the written description of the specification. If applicable, the showing must also identify: (1) each means- (or step-) plus-function claim element that invokes consideration under 35 U.S.C. 112, ¶6; and (2) the structure, material, or acts that correspond to any means- (or step-) plus-function claim element that invokes consideration under 35 U.S.C. 112, ¶6. If the application claims the benefit of one or more applications under title 35, United States Code, the showing must also include where each limitation of the claims finds support under the first paragraph of 35 U.S.C. 112 in each such application in which such support exists.

For more information, see notice "Changes to Practice for Petitions in Patent Applications to Make Special and for Accelerated Examination" available on the USPTO web site at <http://www.uspto.gov/web/office/s/pac/dapp/ogsheet.html>

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	35132425
Application Number:	16274170
International Application Number:	
Confirmation Number:	4761
Title of Invention:	ARTIFICIALLY INTELLIGENT ORDER PROCESSING SYSTEM
First Named Inventor/Applicant Name:	Robley Theron Carpenter III
Customer Number:	120775
Filer:	Jeffrey R. Schell/Kristin Bennett
Filer Authorized By:	Jeffrey R. Schell
Attorney Docket Number:	1397-4-NP
Receipt Date:	12-FEB-2019
Filing Date:	
Time Stamp:	21:00:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$2000
RAM confirmation Number	021319INTEFSW21034200
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	TrackOne Request	2019-02-11_1397-4-NP_Track_I_Request.pdf	1624883	no	1
			5ac1a6dd98242c7b2b99db9dbcc2f777f4a6b108		
Warnings:					
Information:					
2	Application Data Sheet	2019-02-11_1397-4-NP_ADS.pdf	1874213	no	8
			47cf1a17d323b892e7bb79304c5ce239e1db92c1		
Warnings:					
Information:					
3		2_12_2019_1397-4_NP_FINAL_JRS.pdf	293048	yes	32
			56bafff100ca411267efcaed2d0025bc060f4e46		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Abstract		32	32	
	Claims		28	31	
	Specification		1	27	
Warnings:					
Information:					
4	Drawings-only black and white line drawings	2_12_2019_1397-4_Figures.pdf	1684009	no	6
			1276d234f5cf0c64d3ab3a53a619bbeccfe1202		
Warnings:					
The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing					
Information:					

5	Oath or Declaration filed	2-12-2019_1397-4-NP_Declaration_SIGNED.pdf	1596492	no	2
			11596026b9bc17d6fae2c81f4a47ec8254e7b326		
Warnings:					
Information:					
6	Transmittal Letter	2019-02-12_1397-4-NP_IDS_Transmittal.pdf	211087	no	4
			6194d4eee797cbbc806c895d1c373a550ca9883b		
Warnings:					
Information:					
7	Information Disclosure Statement (IDS) Form (SB08)	2019-02-12_1397-4-NP_SB-08.pdf	1053258	no	4
			20f363c93b29d705eeb11661a5fd33740c7aa4fd		
Warnings:					
Information:					
8	Miscellaneous Incoming Letter	2_12_2019_1397-4_Accelerated_Examination_Support_Document_JRS_FINAL.pdf	202848	no	7
			a3d8ff2f2448e9feb66ddbdb0b101ed0cd6bb83		
Warnings:					
Information:					
9	Miscellaneous Incoming Letter	2_12_2019_Pre-Exam_Search_Document_JRS_FINAL.pdf	135757	no	3
			aa9419446c2c282cdd693d7e3a4c830dbb95f4b3		
Warnings:					
Information:					
10	Foreign Reference	CN105894405A.pdf	8854809	no	13
			7445547e972b37e42a1863e715b2c6b322b2801f		
Warnings:					
Information:					
11	Foreign Reference	CN105894405A-Translation_2.pdf	9578157	no	18
			475d0966d184bec5a35b3a71fe57fdec4feaea6d		
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Information:					

12	Fee Worksheet (SB06)	fee-info.pdf	30508	no	2
			47b41b257ebf7b853cc7422f20d27488a68d63dc		

Warnings:

Information:

Total Files Size (in bytes):	27139069
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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.