

PRINTER RUSH

(PTO ASSISTANCE)

Application : 10/14/686 Examiner : Le GAU : 2107

From : T. McGILL Location : IDC FMF FDC Date : 11-14-05

Tracking #: epm 10/14/686 Week Date: 10-10-05

DOC CODE	DOC DATE	MISCELLANEOUS
☒ 1449	<u>3-24-05</u>	☐ Continuing Data
☐ IDS		☐ Foreign Priority
☐ CLM		☐ Document Legibility
☐ IIFW		☐ Fees
☐ SRFW		☐ Other
☐ DRW		
☐ OATH		
☐ 312		
☐ SPEC		

[RUSH] MESSAGE: Please initial line through citation.

[XRUSH] RESPONSE:

Initial IDS listing above

DL

1/8/06

INITIALS: DL

NOTE: This form will be included as part of the official USPTO record, with the Response document coded as XRUSH.

REV 10/04

Form PT0-1449 (modified) LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT(S) INFORMATION DISCLOSURE STATEMENT <i>(Use several sheets if necessary)</i>	Attorney Docket No. ARC920020011US1	Serial N .
	Applicant(s): DENESUK et al.	
	Filing Date: Herewith	Group Art Unit:

U.S. PATENT DOCUMENTS

Examiner Initials	Document No.	Date	Name	Class	Subclass	Filing Date

11046 U.S. PTO
10/14/86
105/06/86

FOREIGN PATENT DOCUMENTS

Examiner Initials	Document No.	Date	Country	Class	Subclass	Translation Yes No

PUBLICATIONS / OTHER ART

Examiner Initials	Citation
<i>nl</i>	PUBLICATION: "USING COLLABORATIVE FILTERING TO WEAVE AN INFORMATION TAPESTRY". Goldberg et al. Communications of the ACM, Vol. 35, No. 12, pp. 61-70. December, 1992.
Examiner <i>nl</i>	Date Considered 3/17/05

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

● PRINTER RUSH ●
(PTO ASSISTANCE)

Application : <u>10/141686</u>	Examiner : <u>Le</u>	GAU : <u>2167</u>
From : <u>T. McGill</u>	Location : <u>IDC</u> FMF FDC	Date : <u>11-14-05</u>
Tracking # : <u>epm 10/141686</u>		Week Date : <u>10-10-05</u>

DOC CODE	DOC DATE	MISCELLANEOUS
☒ 1449	<u>3-24-05</u>	☐ Continuing Data ☐ Foreign Priority ☐ Document Legibility ☐ Fees ☐ Other
☐ IDS	_____	
☐ CLM	_____	
☐ IIFW	_____	
☐ SRFW	_____	
☐ DRW	_____	
☐ OATH	_____	
☐ 312	_____	
☐ SPEC	_____	

[RUSH] MESSAGE:	<u>Please initial line through citation.</u>

[XRUSH] RESPONSE:	
INITIALS:	

NOTE: This form will be included as part of the official USPTO record, with the Response document coded as XRUSH.
REV 10/04

PART B - FEE(S) TRANSMITTAL

Notice of Allowance dated:
October 4, 2005Complete and send this form, together with applicable fee(s), to: Mail

Mail Stop ISSUE FEE

Commissioner for Patents Docket No.:

P.O. Box 1450

Alexandria, Virginia 22313-1450

ARC920020011US1

or Fax

(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)

7590

10/04/2005

Certificate of Mailing or Transmission

Donor 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 facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)

(Signature)

(Date)

International Business Machines Corporation

650 Harry Road, C4TA/J2b
San Jose, CA 95120-6099

11/17/2005 HAL122 00000165 090441 10141686

01 FC:1501 1400.00 DA

02 FC:1504 300.00 DA

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/141,686	05/08/2002	Matthew Denesuk	ARC920020011US1	9366

TITLE OF INVENTION: KNOWLEDGE-BASED DATA MINING SYSTEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$1700	01/04/2006
EXAMINER	ART UNIT	CLASS-SUBCLASS			
LE, DEBBIE M	2167	707-005000			

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 03-02 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. John L. Rogitz

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 has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

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

International Business Machines Corporation, Armonk, New York

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

4a. The following fee(s) are enclosed:

☒ Issue Fee☒ Publication Fee (No small entity discount permitted)☐ Advance Order - # of Copies _____

4b. Payment of Fee(s):

☐ A check in the amount of the fee(s) is enclosed.☐ Payment by credit card. Form PTO-2038 is attached.☒ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number 09-0441 (enclose an extra copy of this form).

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

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above. NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date November 3, 2005Typed or printed name John L. RogitzRegistration No. 33,549

This collection of information 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 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, 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.

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OCT 08 2005

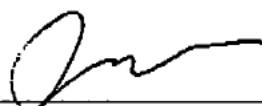
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Applicant: Denesuk	)	Art Unit: 2167
	)	
Serial No.: 10/141,686	)	Examiner: Le
	)	
Filed: May 8, 2002	)	ARC920020011US1
	)	
For: KNOWLEDGE-BASED DATA MINING SYSTEM	)	October 8, 2005
	)	750 B STREET, Suite 3120
	)	San Diego, CA 92101
	)	

STATEMENT ON REASONS FOR ALLOWANCE

The record as a whole makes the reasons for allowance clear. Thus, a statement on reasons for allowance is unnecessary, 37 C.F.R. §104. The "Reasons for Allowance" thus might (and in fact do) misleadingly summarize the record as a whole. For example, only parts of the independent claims have been mentioned in the Reasons, as though those parts themselves sum up the invention when it is axiomatic that the claim as a whole defines the patentable subject matter. Additionally, while it is of course true that a dependent claim of an allowable independent claim is itself allowable regardless of its limitations, it is not true that this means that the limitations of the dependent claims themselves do not impart further patentability, which they do. Since the record as a whole makes clear why the dependent claims are further patentable, the record must be read to indicate the patentability of the dependent claims not just by virtue of their dependency on an allowable independent claim but additionally by virtue of their own limitations.

Respectfully submitted,



John L. Rogitz
Registration No. 33,549
Attorney of Record
750 B Street, Suite 3120
San Diego, CA 92101
Telephone: (619) 338-8075

JLR:jg

1053-135.RFA



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

7590

10/04/2005

John L. Rogitz
Rogitz & Associates
Suite 3120
750 B Street
San Diego, CA 92101

EXAMINER

LE, DEBBIE M

ART UNIT

PAPER NUMBER

2167

DATE MAILED: 10/04/2005

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/141,686	05/08/2002	Matthew Denesuk	ARC920020011US1	9366

TITLE OF INVENTION: KNOWLEDGE-BASED DATA MINING SYSTEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$1700	01/04/2006

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 REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. 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.

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: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail**

**Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
(571) 273-2885**

or **Fax**

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)

7590 10/04/2005

John L. Rogitz
Rogitz & Associates
Suite 3120
750 B Street
San Diego, CA 92101

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 facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/141,686	05/08/2002	Matthew Denesuk	ARC920020011US1	9366

TITLE OF INVENTION: KNOWLEDGE-BASED DATA MINING SYSTEM

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EXAMINER	ART UNIT	CLASS-SUBCLASS
LE, DEBBIE M	2167	707-005000

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- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 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 _____

2 _____

3 _____

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

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(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. The following fee(s) are enclosed:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s):

- ☐ A check in the amount of the fee(s) is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

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

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above. NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information 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 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, 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.

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/141,686	05/08/2002	Matthew Denesuk	ARC920020011US1	9366
7590	10/04/2005			
John L. Rogitz Rogitz & Associates Suite 3120 750 B Street San Diego, CA 92101				
EXAMINER LE, DEBBIE M				
ART UNIT 2167				
PAPER NUMBER				
DATE MAILED: 10/04/2005				

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

The Patent Term Adjustment to date is 623 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 623 day(s).

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 Customer Service Center of the Office of Patent Publication at (703) 305-8283.

Notice of Allowability

Application No.

10/141,686

Examiner

DEBBIE M. LE

Applicant(s)

DENESUK ET AL.

Art Unit

2167

-- 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 7/5/05.
2. ☒ The allowed claim(s) is/are 1-54.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - 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.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ 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)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
 Paper No./Mail Date 7/1/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
 Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION
REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

Claims 1-20, 34-54 are allowable over the prior art of record because the prior art of record fails to teach or fairly suggest creating at least a second data miner in response to the customer request for information as argued by Applicant in the appeal brief received on July 5, 2005, page 7, section (a).

Claims 21-33 are allowable over the prior art of record because the prior art of record fails to teach or fairly suggest at least one lower level data mining element receiving information from the data store and based thereon tagging at least one representation of a Web page with at least one key representing at least one characteristic of the Web page and at least one higher level data mining element using the key to output a result useful for responding to a request for information as argued by Applicant in the appeal brief filed on July 5, 2005, page 8.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record, listed on form PTO-892, and not relied upon, if any, is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEBBIE M. LE whose telephone number is (571) 272-4111. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN BREENE can be reached on (571) 272-4107. 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).

A handwritten signature in black ink, appearing to read 'DL', with a long horizontal line extending to the right.

DEBBIE M LE
Examiner
Art Unit 2167

Debbie Le

Sept. 27, 2005.

Form PTO-1449
U.S. Department of Commerce
Patent and Trademark Office

Docket No.: ARC920020011US1
Serial No.: 10/141,686
Applicant: DENESUK et al.
Filing Date: May 8, 2002

INFORMATION DISCLOSURE CITATION

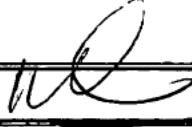
U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Sub-Class	Filing Date
nl	6,430,553	08/2002	Ferret	707	3	

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION YES OR NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

Examiner: 	Date Considered: 9/22/05
---	--------------------------

Examiner's Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Enclose copy of this form with oral communication to applicant.

Notice of References Cited	Application/Control No. 10/141,686	Applicant(s)/Patent Under Reexamination DENESUK ET AL.	
	Examiner DEBBIE M. LE	Art Unit 2167	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,836,773 B2	12-2004	Tamayo et al.	707/6
*	B	US-6,295,559	09-2001	Emens et al.	709/225
*	C	US-6,266,692	07-2001	Greenstein, Bret A.	709/206
*	D	US-6,285,996	09-2001	Jou et al.	707/4
*	E	US-2003/0163302 A1	08-2003	Yin, Hongfeng	704/9
*	F	US-5,899,991	05-1999	Karch, Robert	707/5
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	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.

Issue Classification 	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/141,686	DENESUK ET AL.	
	Examiner	Art Unit	
	DEBBIE M. LE	2167	

ISSUE CLASSIFICATION										
ORIGINAL				CROSS REFERENCE(S)						
CLASS	SUBCLASS			CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					
707	6			707	101					
INTERNATIONAL CLASSIFICATION										
G	0	6	F	17/30						
				/						
				/						
				/						
				/						

(Assistant Examiner) (Date)		Debbie M. Le 9/23/05 Primary Examiner (Primary Examiner) (Date)	Total Claims Allowed: 54	
A. White 9/30/05 (Legal Instruments Examiner) (Date)			O.G. Print Claim(s) 1	O.G. Print Fig. 2

☒ Claims renumbered in the same order as presented by applicant										☐ CPA		☐ T.D.		☐ R.1.47	
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	31	31		61		91		121		151		181		
2	2	32	32		62		92		122		152		182		
3	3	33	33		63		93		123		153		183		
4	4	34	34		64		94		124		154		184		
5	5	35	35		65		95		125		155		185		
6	6	36	36		66		96		126		156		186		
7	7	37	37		67		97		127		157		187		
8	8	38	38		68		98		128		158		188		
9	9	39	39		69		99		129		159		189		
10	10	40	40		70		100		130		160		190		
11	11	41	41		71		101		131		161		191		
12	12	42	42		72		102		132		162		192		
13	13	43	43		73		103		133		163		193		
14	14	44	44		74		104		134		164		194		
15	15	45	45		75		105		135		165		195		
16	16	46	46		76		106		136		166		196		
17	17	47	47		77		107		137		167		197		
18	18	48	48		78		108		138		168		198		
19	19	49	49		79		109		139		169		199		
20	20	50	50		80		110		140		170		200		
21	21	51	51		81		111		141		171		201		
22	22	52	52		82		112		142		172		202		
23	23	53	53		83		113		143		173		203		
24	24	54	54		84		114		144		174		204		
25	25		55		85		115		145		175		205		
26	26		56		86		116		146		176		206		
27	27		57		87		117		147		177		207		
28	28		58		88		118		148		178		208		
29	29		59		89		119		149		179		209		
30	30		60		90		120		150		180		210		

Index of Claims



Application/Control No.

10/141,686

Examiner

DEBBIE M. LE

Applicant(s)/Patent under Reexamination

DENESUK ET AL.

Art Unit

2167

✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
+	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date						
Final	Original		9/23/05					
1	1		=					
2	2		=					
3	3		=					
4	4		=					
5	5		=					
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Claim		Date						
Final	Original		9/23/05					
51	51		=					
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Search Notes

Application/Control No.

10/141,686

Examiner

DEBBIE M. LE

Applicant(s)/Patent under
Reexamination

DENESUK ET AL.

Art Unit

2167

SEARCHED

Class	Subclass	Date	Examiner
707	1-6, 10,101		
706	45-48	9/14/2005	
704	9	9/23/2005	DL

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner
707	6		
	101	9/23/2005	DL

**SEARCH NOTES
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
appeal conference with SPE John Breene and Safet Metjahic. Appeal conferences decided to allow the case.	9/14/2005	
Consult PE Luke Wassum for more advices after allowance decision from the appeal conference on 9/14/05. Suggested to search	9/15/2005	
706 for intellegnet engine. updated search on 9/14/05.		
consult Primary Examiner George Davis (Au 2129 class 706/45-48). George said there was nothing in the claims that made he		
think it should be crossed search in class 706, and if issue, don't classify it to 706. Examiner seemed to agree with him		
because the specification does not mention anything such as IA or neutral network besice the term "analysis engine"	9/20/2005	
consult 101 (Mr. Bookbinder, no 101 issue)	9/21/2005	
updated east search 9/23 and 9/27/05	9/27/2005	DL

10/141,688

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	8	(quey\$4 request\$1) same (min\$4 train\$3) same (tag\$5 append\$3 attach\$3) near key\$1	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/27 14:39
L2	381	(study\$3 analy\$6) near2 engine same (quey\$4 request\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/27 14:44
L3	3	1 and (creat\$3 generat\$3) same (rule\$1 regular adj expression\$1) same (miner\$1 filter\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/27 14:47
L4	2117	(creat\$3 generat\$3) same (rule\$1 regular adj expression\$1) same (miner\$1 filter\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/27 14:47
L5	213	(creat\$3 generat\$3) same (rule\$1 regular adj expression\$1) same (miner\$1 filter\$1) same (request\$1 quer\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/27 14:53
L6	2	(creat\$3 generat\$3) same (rule\$1 regular adj expression\$1) same (miner\$1 filter\$1) same (request\$1 quer\$3) same (tag\$4 append\$3 attach\$3 label\$3) with (key\$1 word\$1 character\$1 symbol\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/27 14:49
L7	65	5 and @rlad<="20020508"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/27 14:53
L8	20	7 and 707/1-104.1.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/27 14:55
L9	1	7 and 706/45-48.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/27 14:54

101141, 686

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	106	(search adj engine crawler\$1 spider\$1) with (web adj page\$1 html page\$1) same (classif\$3 organiz\$3 min\$4) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/23 10:57
L2	24316	(creat\$3 build\$3 generat\$3 establish\$3) same (min\$3 rule\$1 regular adj expression\$1 filter\$1) same (quer\$4 request\$3 search\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/23 10:59
L3	11677	(creat\$3 build\$3 generat\$3 establish\$3) with (min\$3 rule\$1 regular adj expression\$1 filter\$1) same (quer\$4 request\$3 search\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/23 10:59
L4	20	1 and 3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/23 11:26
L5	114	3 and 704/9.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/23 11:26
L6	28	5 and @rlad<="20020508"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/23 11:28
L7	332	3 and 707/1-6,101.ccls. and @rlad<="20020508"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/23 11:30
L8	3	7 and 1	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/23 11:30

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	843	(quer\$4 search\$3 near3 request\$1) same (creat\$3 establish\$3 generat\$3) with min\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 11:31
L2	239	(crawl\$3 spider\$3) same (web adj page\$1 page\$1) same (categor\$3 classif\$9 filter\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 11:27
L3	9	1 and 2	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 11:27
L4	34	(search\$3 near3 request\$1) same (creat\$3 establish\$3 generat\$3) with min\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 11:42
L5	402	(creat\$3 establish\$3 generat\$3) with (object-oriented miner\$1) same (search\$3 request\$1 quer\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 11:59
L6	105	5 and @rlad<="20020508"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 12:00
L7	2	6 and (crawler\$1 spider search adj engine) same (web adj page\$1 html)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 11:46
L8	51	(creat\$3 establish\$3 generat\$3) same miner\$1 same (search\$3 request\$1 quer\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 12:03
L9	8	8 and @rlad<="20020508"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 12:00

L10	21	(creat\$3 establish\$3 generat\$3) same miner\$1 same (search\$3 request\$1 quer\$4) and 707/1-104. 1.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 12:08
L11	30	8 not 10	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 12:08

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S4	1202	(search adj engine crawl\$3 quer\$3) same (internet www) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 13:42
S5	17	(search adj engine crawl\$3 quer\$3) same (internet www) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) same (data adj mining or data adj miner\$1 data near4 analyz\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/17 16:21
S6	215	(search adj engine crawl\$3 quer\$3) same (internet www) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) and (data adj mining or data adj miner\$1 data near4 analyz\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2004/07/08 11:54
S7	85	(search adj engine crawl\$3 quer\$3) same (internet www) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) and (data adj mining or data adj miner\$1 data near4 analyz\$3) and "707"/\$.ccls. and Rlad<="20020528"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2004/07/08 10:32
S8	85	(search adj engine crawl\$3 quer\$3) same (internet www) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) and (data adj mining or data adj miner\$1 data near4 analyz\$3) and "707"/\$.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2004/07/08 11:36
S9	0	"6665658".uref.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2004/07/08 11:44
S10	1	10/141686	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2004/07/08 11:44

S11	100	(search adj engine crawl\$3 quer\$3) same (internet www) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) and (data adj mining or data adj miner\$1 data near4 analyz\$3) and @rlad<="20020528"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2004/07/08 11:55
S12	68	((search adj engine crawl\$3 quer\$3) same (internet www) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) and (data adj mining or data adj miner\$1 data near4 analyz\$3) and @rlad<="20020528") not ((search adj engine crawl\$3 quer\$3) same (internet www) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) and (data adj mining or data adj miner\$1 data near4 analyz\$3) and "707"/\$.cls. and Rlad<="20020528")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2004/07/08 11:55
S13	4457	(search adj engine crawl\$3 quer\$3 spider) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2004/07/08 12:02
S14	331	(search adj engine crawl\$3 quer\$3 spider) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) same (min\$3 analyz\$ exam\$3 pars\$3 classif\$) with (web adj page\$1 html page\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2004/07/08 12:19
S15	320	(search adj engine crawl\$3 quer\$3 spider) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) same (min\$3 analyz\$ exam\$3 pars\$3 classif\$) with (web adj page\$1 html page\$1) and (quer\$3 access\$3 search\$3) with (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2004/07/08 12:07

S13 3	402	(creat\$3 establish\$3 generat\$3) with (object-oriented miner\$1) same (search\$3 request\$1 quer\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 11:59
S13 4	105	S133 and @rlad<="20020508"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 12:00
S13 5	2	S134 and (crawler\$1 spider search adj engine) same (web adj page\$1 html)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 11:46
S13 6	51	(creat\$3 establish\$3 generat\$3) same miner\$1 same (search\$3 request\$1 quer\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 12:03
S13 7	8	S136 and @rlad<="20020508"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 12:00
S13 8	21	(creat\$3 establish\$3 generat\$3) same miner\$1 same (search\$3 request\$1 quer\$4) and 707/1-104.1.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 12:08
S13 9	30	S136 not S138	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 12:08
S14 0	681	(search adj engine crawl\$3 spider\$3) same (internet www) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 13:59
S14 1	637	S140 same (search\$3 quer\$3 request\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 13:56
S14 2	5	S141 and 706/45-48.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 13:47

S14 3	1	(creat\$3 generat\$3 establish\$3) same (miner\$1) same (search\$3 quer\$3 request\$3) and 706/45-48. ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 13:53
S14 4	1195	(search\$3 quer\$3 request\$3) and 706/45-48.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 13:57
S14 5	314	S144 and @rlad<="20020508"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 13:57
S14 6	75534	(web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 13:59
S14 7	45	S145 and S146	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/09/14 13:59



UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/141,686	05/08/2002	Matthew Denesuk	ARC920020011US1	9366

7590

07/06/2005

John L. Rogitz
Rogitz & Associates
Suite 3120
750 B Street
San Diego, CA 92101

EXAMINER

LE, DEBBIE M

ART UNIT	PAPER NUMBER
----------	--------------

2167

DATE MAILED: 07/06/2005

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

Office Action Summary

Application No.

10/141,686

Applicant(s)

DENESUK ET AL.

Examiner

DEBBIE M. LE

Art Unit

2167

-- 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 MONTH(S) 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 the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- 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 29 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ 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

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ 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).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ 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) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/14/05.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____



Docket No.: ARC920020011US1
Serial No.: 10/141,686
Applicant: DENESUK et al.
Filing Date: May 8, 2002

INFORMATION DISCLOSURE CITATION

U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Sub-Class	Filing Date
RL	2002/0156779A1	10/2002	Elliott et al.	707	6	
	6,606,659 B1	08/2003	Hegli et al.	709	225	
	6,691,105 B1	02/2004	Viridy, Ajaipal Singh	707	3	
	6,769,016 B2	07/2004	Rothwell et al.	709	206	
	US 6,263,334 B1	07/17/01	Fayyadet al.	707	5	
	US 6,330,563 B1	12/11/01	Heckerman et al.	707	100	
	US 6,134,555	10/17/00	Chadha et al.	707	102	
	5,737,592	4/1998	Nuguyen et al.	707	4	
	6,047,284	04/2000	Owens et al.	707	4	
	6,092,064	07/2000	Aggarawal et al.	707	6	
	6,101,502	08/2000	Heubner et al.	707	103R	
	6,430,553	08/2002	Ferret, Bernard A.	707	3	
	6,768,986	07/2004	Cras et al.	707	2	
	2002/0091681	07/2002	Cras et al.	707	3	

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION YES OR NO
RL	EP 0797161A2	03/21/1997	European	G06F 17/30		
RL	EP 1111515A2	12/20/2000	European	G06F 17/30		
RL	EP 0797161A3	03/21/1997	European	G06F 17/30		

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

RL	Goldberg et al.: "Using Collaborative Filtering to Weave and Information Tapestry" Communication of the ACM, Vol. 35, No.12, pp. 61-70 December, 1992.
RL	Ganti v. et al.: "Mining Very Large Databases" Computer, IEEE Computer Society, Long Beach., CA, US vol.32, no.8, August 1999 (1999-08), pages 38-45, XP000923707, ISSN: 0018-9162

Examiner:	Date Considered: 6/27/05
-----------	--------------------------

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

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JUL 05 2005

First Named Applicant: Denesuk	)	Art Unit: 2167
Serial No.: 10/141,686	)	Examiner: Le
Filed: May 8, 2002	)	ARC920020011US1
For: KNOWLEDGE-BASED DATA MINING SYSTEM	)	
	)	July 5, 2005
	)	750 B Street, Suite 3120
	)	San Diego, CA 92101
	)	
	)	
	)	
	)	

**FACSIMILE TRANSMITTAL LETTER FOR NOTICE OF APPEAL
AND APPEAL BRIEF**

Commissioner for Patent
Alexandria, VA 22313
Dear Sir:

In response to the final Office Action dated June 16, 2005, enclosed herewith are the following:

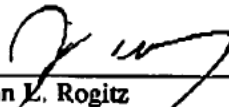
1. Notice of Appeal
2. Appeal Brief in 15 pages including Annexes A, B and C

The Commissioner is hereby authorized to charge \$1000 to Deposit Account 09-0441 for fees required under 37 CFR 1.16 or 1.17 (in this case, for the Notice of Appeal and the Appeal Brief fees).

Respectfully submitted,

**RECEIVED
OIPE/IAP**

JUL 06 2005


John L. Rogitz
Registration No. 33,549
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San Diego, CA 92101
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JUL 05 2005

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Applicant: Denesuk

Serial No.: 10/141,686

Filed: May 8, 2002

For: **KNOWLEDGE-BASED DATA MINING SYSTEM**

Art Unit: 2167

Examiner: Le

ARC920020011US1

July 5, 2005

750 B STREET, Suite 3120

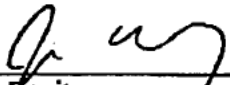
San Diego, CA 92101

NOTICE OF APPEALCommissioner of Patents and Trademarks
Washington, DC 20231

Dear Sir:

The final rejections in the Office Action dated June 16, 2005 are hereby appealed. The Commissioner is hereby authorized to charge Deposit Account 09-0441 for fees required under 37 CFR 1.16 or 1.17 (in this case, for the Notice of Appeal and the Appeal Brief).

Respectfully submitted,



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JLR:jg

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Applicant: Denesuk	)	Art Unit: 2167
	)	
Serial No.: 10/141,686	)	Examiner: Le
	)	
Filed: May 8, 2002	)	ARC920020011US1
	)	
For: KNOWLEDGE-BASED DATA MINING SYSTEM	)	July 5, 2005
	)	750 B STREET, Suite 3120
	)	San Diego, CA 92101
	)	

APPEAL BRIEF

Commissioner of Patents and Trademarks

Dear Sir:

This brief is submitted under 35 U.S.C. §134 and is in accordance with 37 C.F.R. Parts 1, 5, 10, 11, and 41, effective September 13, 2004 and published at 69 Fed. Reg. 155 (August 2004). This brief is further to Appellant's Notice of Appeal filed herewith.

Table of Contents

<u>Section</u>	<u>Title</u>	<u>Page</u>
(1)	Real Party in Interest.....	2
(2)	Related Appeals/Interferences.....	2
(3)	Status of Claims.....	2
(4)	Status of Amendments.....	2
(5)	Concise Explanation of Subject Matter in Each Independent Claim.	2
(6)	Grounds of Rejection to be Reviewed.....	3
(7)	Argument.....	3
App.A Appealed Claims		
App.B Evidence Appendix		
App.C Related Proceedings Appendix		

1053-135.APP

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CASE NO.: ARC920020011US1
Serial No.: 10/141,686
July 5, 2005
Page 2

PATENT
Filed: May 8, 2002

(1) Real Party in Interest

The real party in interest is IBM Corp.

(2) Related Appeals/Interferences

No other appeals or interferences exist which relate to the present application or appeal.

(3) Status of Claims

Claims 1-54 are pending and finally rejected, which rejections are appealed.

(4) Status of Amendments

No amendments are outstanding.

(5) Concise Explanation of Subject Matter in Each Independent Claim, with Page and Figure Nos.

As an initial matter, it is noted that according to the Patent Office, the concise explanations under this section are for Board convenience, and do not supersede what the claims actually state, 69 Fed. Reg. 155 (August 2004), see page 49976. Accordingly, nothing in this Section should be construed as an estoppel that limits the actual claim language.

Claim 1 sets forth a method for data mining that includes crawling the Internet to return Web pages to a data store (18, figure 1, page 6, lines 1-10), and accessing the data store with at least a first data miner (example miners 34-50 in the miner library 32, figure 1, page 11, lines 5-15) to process data in the store and output at least one result. The method also includes receiving a customer request for information, creating

1073-135.APP

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
July 5, 2005
Page 3

PATENT
Filed: May 8, 2002

at least a second data miner (block 66, figure 2, page 17, lines 3-19) in response to the customer request for information, with the second data miner accessing at least the result of the first data miner to generate an output. Based the output of the second data miner, the customer request for information is satisfied, id., block 70.

Claim 21 sets forth a system for responding to customer requests for information that includes a data store (18, supra) holding information representing at least Web pages and a lower level data mining element (34-50, supra) receiving information from the data store and based thereon tagging at least one representation of a Web page with at least one key representing a characteristic of the Web page, block 64, figure 2, page 16, lines 15-21). A higher level data mining element uses the key to output a result useful for responding to a request for information (block 66, supra).

Claim 34 recites an information service that includes means (e.g., 54, figure 1, page 15, lines 1-7) for accessing, with at least a first data miner, a data store containing information representing at least one Web page to process data in the store and output at least one result, supra. Means (36, id.) are provided for receiving a customer request for information, and means (30, figure 1, page 10, lines 15-22) create at least a second data miner in response to the customer request for information. The second data miner accesses the result of the first data miner to generate an output, supra. The service includes means for responding to the customer request for information at least partially based on the output of the second data miner.

(6) Grounds of Rejection to be Reviewed on Appeal

1053-135.AJP

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
July 5, 2005
Page 4

PATENT
Filed: May 8, 2002

(a) Independent Claims 1 and 34 and dependent Claims 3-5, 19, 20, 32-34, 36-38, 52, and 53 have been rejected under 35 U.S.C. §102 as being anticipated by Chipman et al., USPP 2002/0091923, now USPN 6,799,174.

(b) Independent Claim 21 and dependent Claims 6-11, 16, 17, 22-27, 29, 30, 39-44, 49, and 50 have been rejected under 35 U.S.C. §103 as being unpatentable over Chipman et al. in view of Hegli et al., USPN 6,606,659.

(c) Dependent Claims 2 and 35 have been rejected as being unpatentable over Chipman et al. in view of Jaramillo, USPP 2002/0049773.

(d) Dependent Claims 12-15, 18, 28, 31, 45-48, and 51 have been rejected as being unpatentable over Chipman et al. in view of Hegli et al. and further in view of Virdy, USPN 6,691,105.

(e) Claim 54 has been rejected based on Chipman in view of Newell et al., USPP 2003/0112270.

(7) Argument

As an initial matter, it is noted that according to the Patent Office, a new ground of rejection in an examiner's answer should be "rare", and should be levied only in response to such things as newly presented arguments by Applicant or to address a claim that the examiner previously failed to address, 69 Fed. Reg. 155 (August 2004), see, e.g., pages 49963 and 49980. Furthermore, a new ground of rejection must be approved by the Technology Center Director or designee and in any case must come accompanied with the initials of the conferees of the appeal conference, *id.*, page 49979.

1053-135,APP

CASE NO.: ARC920020011US1

Serial No.: 10/141,686

July 5, 2005

Page 5

PATENT
Filed: May 8, 2002

(a) Claims 1 and 34 now recite "creating" a second miner instead of "establishing" it. This overcomes Chipman et al. because in the relied-upon section (paragraph 52) of Chipman et al. alleged to teach "establishing a miner in response to a user request for data", no new miners are created. Rather, the request is passed to pre-existing search engines, and this is repeated in paragraphs 53 and 56 of Chipman et al. Thus, even if the examiner had been reading, legitimately or not, "establishing a miner" to mean "picking a pre-existing search engine", this overly broad interpretation simply cannot now hold since Claims 1 and 34 explicate "creating" a miner in response to a user search request. This novel aspect simply is neither taught nor suggested.

The examiner has responded to the above point by a puzzling *non-sequitur*, equating parsing and storing a request with creating a data miner. Just how or why the skilled artisan would be misled into mistaking parsing and storing a search request with creating a data miner to explore that search request has not been explained. Nor can it be washed away under the guise of "broad claim interpretation during prosecution" because it has not been shown where the prior art supports the conjecture that the skilled artisan would confuse parsing and storing a search request with creating an instrument to search the output of another miner, see MPEP §2111.01. Because the relied-upon reference utterly fails to teach or suggest every element of the claims at issue in this section, the rejections beg for reversal.

(b) It has been alleged that Chipman et al. "tags" a representation of a Web page at figure 6, numbers 617, 619 and page 7, paragraph 74, evidently relying on the RIDB, but this is incorrect. Chipman et al. stores strings in the RIDB which is separate from the Web pages found by the crawler; thus, no representation of the Web pages ever is "tagged" with anything, since "tag" clearly connotes "append".

1053-135.APP

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
July 5, 2005
Page 6

PATENT
Filed: May 8, 2002

Moreover, the allegation that Hegli et al. teaches tagging Web pages with "keys" at col. 4, lines 21-29 and col. 9, lines 13-20 similarly is factually wrong. In the relied-upon section of column 4 Hegli et al. discusses a seeming irrelevancy, namely, that a training database includes lexical words. The relied-upon portion of column 9 discloses only that words are given relevance scores that are used to classify documents, but there is absolutely no teaching or suggestion that the scores are appended to representations of the Web pages from which the scores are derived. The allegation to the contrary simply reads something into Hegli et al. that is not there.

This observation has been responded to by what is in effect an admission that Claim 21 is patentable, namely, that the relied-upon scores are used only for assigning a category to a page. Sensing the destructive effect this admission has on the *prima facie* case, the examiner quickly explains that while the rejection looks like smoke and mirrors, it isn't, because "tagging Web pages with a key or tagging a category with a key are interchangeable". They are? The question remains unanswered because no prior art support has been pointed to for the examiner's hypothetical "interchangeability".

Additionally, the proposed combinations of references fail to find prior art motivation. By way of non-limiting example, the proffered suggestion to alter Chipman et al. with Hegli et al. - to "allow administrators to prevent an end-user accessing site such as pornography", bears no relevance to Chipman et al., which is an information retrieval system that does not appear to be concerned at all with the spam/pornography access control of Hegli et al. Thus, while a suggestion to combine may come from a secondary reference, it must bear some relevance to the primary reference; a feature of a secondary reference cannot be applied to a primary reference in a vacuum if that feature is relevant to only the secondary reference.

1093-135,APP

CASE NO.: ARC920020011US1

Serial No.: 10/141,686

July 5, 2005

Page 7

PATENT
Filed: May 8, 2002

The examiner has responded that Chipman et al. indeed provides the requisite motivation when it teaches that "MLS is limited to real estate agents only", with sellers and buyers being excluded, and that this suggests tagging, because tagging, according to the inventive examiner, could be used to exclude sellers and buyers but not agents. But this is nothing more than bootstrapping a suggestion to tag a miner output from an unrelated and irrelevant desire to exclude non-agents from real estate listings. Appellant observes that tagging is something of an elaborate (and in any case unsuggested) way to exclude certain users. Such exclusion ordinarily is done using access control principles such as passwords. The examiner points to no prior art suggestion that tagging is a known scheme of access control, only that, in the examiner's fertile imagination, it could be so used. While the examiner thus might consider applying for a patent on the idea, it cannot be used in the present case as the requisite motivation to combine.

(c) In addition to the reasons above, like Hegli, Jaramillo is focused on limiting access, not searching *per se*, and so the requisite prior art motivation to combine it with Chipman et al. fails. Furthermore, unlike Claim 2 and contrary to the allegation in the Office Action Jaramillo bills only by subscription, not by query. Accordingly, even if the references were combined as proposed Claim 2 would not result.

(d) In addition to the reasons above, there would seem to be no prior art suggestion to adopt an element of Viridy, which is directed to organizing businesses, into the olio of Chipman/Hegli. Viridy seeks only to classify businesses; it does not relate to data mining of the present invention, or to access control of Hegli.

1053-135.APP

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
July 5, 2005
Page 8

PATENT
Filed: May 8, 2002

(c) In addition to the reasons above, the proffered suggestion to combine the litigation management system of Newell et al. with a completely unrelated technology set forth in Chipman is fabricated and without any fair prior art basis.

Respectfully submitted,



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JLR:jg

1053.135.APP

CASE NO.: ARC920020011US1

Serial No.: 10/141,686

July 5, 2005

Page 9

PATENT
Filed: May 8, 2002**APPENDIX A - APPEALED CLAIMS**

1. A method for data mining, comprising:
crawling the Internet to return Web pages to a data store;
accessing the data store with at least a first data miner to process data in the store and output at least one result;
receiving a customer request for information;
creating at least a second data miner in response to the customer request for information, the second data miner accessing at least the result of the first data miner to generate an output; and
at least partially based on the output of the second data miner, responding to the customer request for information.
2. The method of Claim 1, comprising billing the customer for responding to the customer request for information.
3. The method of Claim 1, wherein the method is provided to the customer as a service, and the acts of crawling, accessing, receiving, creating, and responding are undertaken at a vendor facility.
4. The method of Claim 1, further comprising providing at least one software product to the customer, the product being useful for undertaking at least the acts of accessing the result of the first data miner and responding to the customer request for information at a customer facility.
5. The method of Claim 4, wherein the product is useful for undertaking at least the acts of accessing the data store with at least the first data miner and receiving the customer request for information.
6. The method of Claim 1, wherein the result output by the first data miner includes at least one key representing at least one characteristic of at least one entity in the data store.
7. The method of Claim 6, wherein the key is added to a table having therein plural entities, at least some entities having at least one attribute.
8. The method of Claim 6, wherein the value of the key is a binary value.
9. The method of Claim 6, wherein the value of the key is a non-binary value.
10. The method of Claim 6, wherein the key represents whether the associated entity is pornography.
11. The method of Claim 6, wherein the key represents whether the associated entity is a high quality entity.

1053-135.APP

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
July 5, 2005
Page 10

PATENT
Filed: May 8, 2002

12. The method of Claim 6, wherein the key indicates whether the associated entity represents a corporation.
13. The method of Claim 6, wherein the key represents whether the associated entity represents a person.
14. The method of Claim 6, wherein the key represents a geographical characteristic of the associated entity.
15. The method of Claim 6, wherein the first miner outputs at least a first key representing whether the associated entity is pornography, and second through fifth miners operate on data in the data store to respectively generate second through fifth keys respectively representing whether an associated entity is a high quality entity, whether an associated entity represents a corporation, whether an associated entity represents a person, and a geographical characteristic of an associated entity.
16. The method of Claim 6, wherein the entity represents a Web page.
17. The method of Claim 6, wherein the entity represents a hyperlink.
18. The method of Claim 6, wherein the entity represents at least one of: a corporation, a demographic group, a geographic region.
19. The method of Claim 1, wherein the data miner includes rules for generating the result.
20. The method of Claim 1, wherein the result of the miner is useful for generating at least one index of the data store.
21. A system for responding to customer requests for information, comprising:
 - at least one data store holding information representing at least Web pages;
 - at least one lower level data mining element receiving information from the data store and based thereon tagging at least one representation of a Web page with at least one key representing at least one characteristic of the Web page; and
 - at least one higher level data mining element using the key to output a result useful for responding to a request for information.
22. The system of Claim 21, wherein the result output by the higher level data mining element is a key representing at least one characteristic of a Web page.

1053-135.APP

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
July 5, 2005
Page 11

PATENT
Filed: May 8, 2002

23. The system of Claim 21, further comprising at least one Web crawler populating the data store.
24. The system of Claim 21, wherein the data mining elements are executed at a vendor facility, and the customer requests for information are responded to in a service format.
25. The system of Claim 21, wherein at least the higher level data mining element is executed at a customer facility.
26. The system of Claim 21, wherein the value of the key is a binary value.
27. The system of Claim 21, wherein the value of the key is a non-binary value.
28. The system of Claim 21, wherein the key represents at least one of: whether an associated entity representative of a Web page in the data store is pornography, whether the associated entity is a high quality entity, whether the associated entity represents a corporation, whether the associated entity represents a person, and a geographical characteristic of the associated entity.
29. The system of Claim 21, wherein at least some entities in the data store represent Web pages.
30. The system of Claim 29, wherein at least some entities represent hyperlinks.
31. The system of Claim 30, wherein at least some entities represent at least one of: a corporation, a demographic group, a geographic region.
32. The system of Claim 21, wherein the data mining element includes rules for generating the key.
33. The system of Claim 21, wherein the mining element is useful for generating at least one index of the data store.
34. An information service, comprising:
means for accessing, with at least a first data miner, a data store containing information representing at least one Web page to process data in the store and output at least one result;
means for receiving a customer request for information;
means for creating at least a second data miner in response to the customer request for information, the second data miner accessing at least the result of the first data miner to generate an output; and
means for responding to the customer request for information at least partially based on the output of the second data miner.

1053-135.APP

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
July 5, 2005
Page 12

PATENT
Filed: May 8, 2002

35. The service of Claim 34, comprising means for billing the customer for responding to the customer request for information.

36. The service of Claim 34, wherein the service is provided to the customer as a service, and the means for accessing, receiving, creating, and responding are executed at a vendor facility.

37. The service of Claim 34, wherein at least one software product is provided to the customer, the product being useful for executing at least the means for accessing the result of the first data miner and responding to the customer request for information at a customer facility.

38. The service of Claim 37, wherein the product is useful for executing at least the means for accessing the data store with at least the first data miner and receiving the customer request for information.

39. The service of Claim 34, wherein the result output by the first data miner includes at least one key representing at least one characteristic of at least one entity in the data store.

40. The service of Claim 39, further comprising means for adding the key to a table having therein plural entities, at least some entities having at least one attribute.

41. The service of Claim 39, wherein the value of the key is a binary value.

42. The service of Claim 39, wherein the value of the key is a non-binary value.

43. The service of Claim 39, wherein the key represents whether the associated entity is pornography.

44. The service of Claim 39, wherein the key represents whether the associated entity is a high quality entity.

45. The service of Claim 39, wherein the key indicates whether the associated entity represents a corporation.

46. The service of Claim 39, wherein the key represents whether the associated entity represents a person.

47. The service of Claim 39, wherein the key represents a geographical characteristic of the associated entity.

48. The service of Claim 39, wherein the first miner outputs at least a first key representing whether the associated entity is pornography, and second through fifth miners operate on data in the data store

1033-133.APT

CASE NO.: ARC920020011US1

Serial No.: 10/141,686

July 5, 2005

Page 13

PATENT
Filed: May 8, 2002

to respectively generate second through fifth keys respectively representing whether an associated entity is a high quality entity, whether an associated entity represents a corporation, whether an associated entity represents a person, and a geographical characteristic of an associated entity.

49. The service of Claim 39, wherein the entity represents a Web page.

50. The service of Claim 39, wherein the entity represents a hyperlink.

51. The service of Claim 39, wherein the entity represents at least one of: a corporation, a demographic group, a geographic region.

52. The service of Claim 34, wherein the data miner includes rule means for generating the result.

53. The service of Claim 52, further comprising means for generating at least one index of the data store at least partially based on the result of the miner.

54. The method of Claim 1, wherein the output of the second miner is useful for identifying at least one linking entity for expanding a scope of a litigation discovery request.

1053-135 APP

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
July 5, 2005
Page 14

PATENT
Filed: May 8, 2002

APPENDIX B - EVIDENCE

None (this sheet made necessary by 69 Fed. Reg. 155 (August 2004), page 49978.)

1053-115.APP

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
July 5, 2005
Page 15

PATENT
Filed: May 8, 2002

APPENDIX C - RELATED PROCEEDINGS

None (this sheet made necessary by 69 Fed. Reg. 155 (August 2004), page 49978.)

1053-135.APP

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Applicant(s): Denesuk et al.) Art Unit: 2167 JUL 01 2005
Serial No.: 10/141,686) Examiner: Le
Filing Date: May 8, 2002) Case No. #: ARC920020011US1
For: KNOWLEDGE-BASED DATA MINING SYSTEM) June 30, 2005
750 "B" Street, Suite 3120
San Diego, CA 92101
Customer No. 24955

FACSIMILE TRANSMITTAL LETTER AND SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT

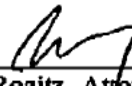
Commissioner for Patents
Alexandria, VA 22313
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Dear Sir:

Pursuant to Sections 1.97, 1.98, and 1.99 of the Rules of Practice in patent cases, enclosed is the "List of References Cited by Applicant," Form PTO-1449, submitted herewith.

The commissioner is hereby authorized to charge Deposit Account No. 09-0441 in the amount of \$180.

Respectfully submitted,


John L. Rogitz, Attorney of Record
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Form PTO-1449
U.S. Department of Commerce
Patent and Trademark Office

Docket No.: ARC920020011US1
Serial No.: 10/141,686
Applicant: DENESUK et al.
Filing Date: May 8, 2002

INFORMATION DISCLOSURE CITATION**U.S. PATENT DOCUMENTS**

Examiner Initial	Document Number	Date	Name	Class	Sub-Class	Filing Date
	6,430,553	08/2002	Ferret	707	3	

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION YES OR NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

Examiner:	Date Considered:
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Examiner: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/141,686	05/08/2002	Matthew Denesuk	ARC920020011US1	9366

7590 06/16/2005

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EXAMINER

LE, DEBBIE M

ART UNIT PAPER NUMBER

2167

DATE MAILED: 06/16/2005

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

Office Action Summary

Application No.

10/141,686

Applicant(s)

DENESUK ET AL.

Examiner

DEBBIE M. LE

Art Unit

2167

-- 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 MONTH(S) 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 the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- 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 29 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ 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

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ 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).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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).
- a) ☐ All b) ☐ Some * c) ☐ None of:
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) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/31/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's arguments filed on 3/29/05. Claims 1-54 are presented for examinations.

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 3/31/05 has been considered by the examiner. Please attached PTO-1449.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

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 –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3-5, 19-20, 32-34, 36-38, 52-53 are rejected under 35 U.S.C. 102(e) as being anticipated by Chipman et al (USP Application No. 2002/0091923 A1).

As per claim 1, Chipman teaches a method for data mining, comprising:

'crawling the Internet to return Web pages to a data store' as a crawler scans the web for pages and stores in the knowledge base [See Fig. 2, Web crawler # 205, knowledge base # 206, web pages # 207-209, page 5, ¶ 0052, line 1-2];

'accessing the data store with at least a first data miner to process data in the store and output at least one result' as a crawler parses the received pages into character strings and stores the strings in reverse index database (hereinafter "RIDB") [See Fig. 6, # 617, # 619, page 7, ¶ 0074, lines 14-16];

'receiving a customer request for information' as a user submitting a search request via HTML page 306 [See Fig. 3, page 5, 0053, lines 2-3] or a user supplies target values for the attributes of interest [See page 5, ¶ 0056, lines 1-2];

'creating at least a second data miner in response to the customer request for information' as the search request HTML page 306 are parsed and added to knowledge base [see par. 63], **the second data miner accessing at least the result of the first data miner to generate an output'** and a search engine search the knowledge base for results meeting various search criteria [See page 5, ¶ 0052, lines 12-17]; and

'at least partially based on the output of the second data miner, responding to the customer request for information' as a specific page is retrieved for

Art Unit: 2167

information as requested by the user [See page 5, ¶ 0052, lines 11-12, page 8, 0074, lines 29-30].

As per claim 3, Chipman teaches provided to the customer as a service, and the acts of crawling, accessing, receiving, creating, and responding are undertaken at a vendor facility (par. 0034, first 4 lines).

As per claim 4, Chipman teaches providing at least one software product to the customer, the product being useful for undertaking at least the acts of accessing the result of the first data miner and responding to the customer request for information at a customer facility (see par. 0034, make their information available for retrieval... such as information through Web pages in HTML, XML... Web-accessible storage media).

As per claim 5, Chipman teaches wherein the product is useful for undertaking at least the acts of accessing the data store with at least the first data miner and receiving the customer request for information (par. 0018).

As per claim 19, Chipman teaches wherein the data miner includes rules for generating the result (par. 0087).

As per claim 20, Chipman teaches wherein the result of the miner is useful for generating at least one index of the data store (par. 0052, 0054, 0063).

Claim 32 has similar limitations as claim 19; therefore, it is rejected under the same subject matter.

Claim 33 has similar limitations as claim 20; therefore, it is rejected under the same subject matter.

As per claim 34, Chipman discloses an information service, comprising:
means for accessing, with at least a first data miner, a data store containing information representing at least one Web page to process data in the store and output at least one result as a crawler scans the web for pages and stores in the knowledge base [See Fig. 2, Web crawler # 205, knowledge base # 206, web pages # 207-209, page 5, ¶ 0052, line 1-2] *then a crawler parses the received pages into character strings and stores the strings in reverse index database (hereinafter "RIDB")* [See Fig. 6, # 617, # 619, page 7, ¶ 0074, lines 14-16];

means for receiving a customer request for information as a user submitting a search request via HTML page 306 [See Fig. 3, page 5, 0053, lines 2-3] *or a user supplies target values for the attributes of interest* [See page 5, ¶ 0056, lines 1-2];

means for creating at least a second data miner in response to the customer request for information as the search request HTML page 306 are parsed and added to knowledge base [see par. 63], **the second data miner accessing at least the result of the first data miner to generate an output as a search engine**

search the knowledge base for results meeting various search criteria [See page 5, ¶ 0052, lines 12-17]; and

means for responding to the customer request for information at least partially based on the output of the second data miner as a specific page is retrieved for information as requested by the user [See page 5, ¶ 0052, lines 11-12, page 8, 0074, lines 29-30].

Claim 36 has similar limitations as claim 3; therefore, it is rejected under the same subject matter.

Claim 37 has similar limitations as claim 4; therefore, it is rejected under the same subject matter.

Claim 38 has similar limitations as claim 5; therefore, it is rejected under the same subject matter.

Claim 52 has similar limitations as claim 19; therefore, it is rejected under the same subject matter.

Claim 53 has similar limitations as claim 20; therefore, it is rejected under the same subject matter.

Claim Rejections - 35 USC § 103

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

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 2 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chipman et al (US Patent Application No. 2002/0091923 A1) as applied to claim 1 above, and further in view of Jaramillo (US Patent Application No. 2002/0049773 A1).

As per claims 2 and 5, Chipman does not explicitly teach billing the customer for responding to the customer request for information. However, Jaramillo teaches **billing the customer for responding to the customer request for information** (see par. 0026). Thus, it would have been obvious to one of ordinary skill in the art at the time

the invention was made to combine the teachings of the cited references to implement the step of billing the customer for responding to the customer request for information as disclosed by Jaramillo. This would allow users of Chipman's system (i.e., engineers, designers, computer programmers, businesses) to make a profit in order to maintain their system so that it continues to provide quick and efficient services and products which satisfy the needs of specific end-users, as suggested by Chipman (see par. 0006, 0010).

5. Claims 6-11, 16-17, 21-27, 29-30, 39-44, 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chipman et al (US Patent Application No. 2002/0091923 A1) as applied to claim 1 above, and further in view of Hegli et al (US Patent 6,606,659 B1).

As per claim 6, Chipman teaches organizing information of the plurality entities, such as business, organizations, etc. [See page 3, 0034, line 19, page 7, 0074, lines 16-17]. Chipman does not explicitly teach wherein the result output by the first data miner includes at least one key representing at least one characteristic of at least one entity in the data store. However, Hegli teaches **the result output by the first data miner includes at least one key representing at least one characteristic of at least one entity in the data store** (col. 4, lines 21-29, col. 9, lines 13-20). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Hegli's system with Chipman's system to tag the result output by the first data miner with a key representing at least one characteristic of at

least one entity in the knowledge database as disclosed by Hegli. This would provide users of Chipman's system (such as administrators) to prevent an end-user accessing to sites, such as those containing pornography, that most parents or businesses desire to block, as suggested by Hegli (see col. 1, lines 24-35, 51-57).

As per claim 7, Hegli teaches wherein the key is added to a table having therein plural entities, at least some entities having at least one attribute (see Fig. 3).

As per claims 8-9, Hegli teaches wherein the value of the key is a binary value, no-binary key (see Fig. 3).

As per claim 10, Hegli teaches wherein the key represents whether the associated entity is pornography (see Fig. 3).

As per claim 11, Hegli teaches wherein the key represents whether the associated entity is a high quality entity (Fig. 6).

As per claim 16, Chipman teaches wherein the entity represents a Web page (par. 0036, 0085).

As per claim 17, Chipman teaches wherein the entity represents a hyperlink (par. 0036, 0086).

As per claim 21, Chipman discloses a system for responding to customer requests for information, comprising:

at least one data store holding information representing at least Web pages
as a crawler scans the web for pages and stores in the knowledge base [See Fig. 2, Web crawler # 205, knowledge base # 206, web pages # 207-209, page 5, ¶ 0052, line 1-2];

at least one lower level data mining element receiving information from the data store and based thereon tagging at least one representation of a Web page
as a crawler parses the received pages into character strings and stores the strings in reverse index database (hereinafter "RIDB") [See Fig. 6, # 617, # 619, page 7, ¶ 0074, lines 14-16], a Web page (i.e., an HTML) with the appropriate tags (par. 13, last 8 lines), wherein the HTML includes a "class" identifier (see par. 13, first 6 lines). Instead of storing all possible information from each Web page in the storage collection of information, the catalog may only store some information such as "class", "attribute". Thus, an HTML includes a "class", the "class" is stored in the catalog that allow a user to search for and identify the accessed item (par. 16);

at least one higher level data mining element using the key to output a result useful for responding to a request for information as a specific page is retrieved for information as requested by the user [See page 5, ¶ 0052, lines 11-12, page 8, 0074, lines 29-30].

Chipman teaches organizing information of the plurality entities, such as business, organizations, etc [See page 3, 0034, line 19, page 7, 0074, lines 16-17].

Chipman does not explicitly teach tagging at least one representation of a Web page with at least one key representing at least one characteristic of the Web page.

However, Hegli teaches **tagging at least one representation of a Web page with at least one key representing at least one characteristic of the Web page** (Fig. 5, col. 4, lines 21-29, col. 9, lines 13-20). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Hegli's system with Chipman's system to tag the result output by the first data miner with a key representing at least one characteristic of at least one entity in the knowledge database as disclosed by Hegli. This would provide users of Chipman's system easily to search and analyze information relating to a subject of interest in order to satisfy the needs of specific users (i.e., real estate agents would access a knowledge base for retrieving a category residential and commercial listings) as suggested by Chipman (par. 4). In addition, it would provide users of Chipman's system (such as administrators) to prevent an end-user accessing to sites, such as those containing pornography, that most parents or businesses desire to block, as suggested by Hegli (see col. 1, lines 24-35, 51-57) or preventing users without legitimate reasons for accessing the desired data such as multiple listing service (MLS) because MLS is limited to real estate agents only (see Chipman, par. 9).

As per claim 22, Hegli teaches wherein the result output by the higher level data mining element is a key representing at least one characteristic of a Web page (col. 4, lines 21-29).

As per claim 23, Chipman teaches at least one Web crawler populating the data store *as a crawler parses the received pages into character strings and stores the strings in reverse index database (hereinafter "RIDB")* [See Fig. 6, # 617, # 619, page 7, ¶ 0074, lines 14-16].

As per claim 24, Chipman teaches wherein the data mining elements are executed at a vendor facility, and the customer requests for information are responded to in a service format (par. 0034).

As per claim 25, Chipman teaches wherein at least the higher level data mining element is executed at a customer facility (par. 0034, 0062-0063).

Claims 26-27 have similar limitations as claims 8-9; therefore, they are rejected under the same rationale.

Claims 29-30 have similar limitations as claims 16-17; therefore, they are rejected under the same rationale.

Claims 39 has similar limitations as claim 6; therefore, it is rejected under the same rationale.

Claim 40 similar limitations as claim 7; therefore, it is rejected under the same rationale.

Claims 41-42 have similar limitations as claims 8-9; therefore, they are rejected under the same rationale.

Claims 43-44 have similar limitations as claims 10-11; therefore, they are rejected under the same rationale.

Claims 49-50 have similar limitations as claims 16-17; therefore, they are rejected under the same rationale.

6. Claims 12-15, 18, 28, 31, 45-48, 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chipman et al (US Patent Application No. 2002/0091923 A1) in view of Hegli et al (US Patent 6,606,659 B1) and further in view of Viridy (US Patent 6,691,105 B1).

As per claims 12-14, Chipman and Hegli do not explicitly teach wherein the key indicates whether the associated entity represents a corporation, a person, a geographical characteristic of the associated entity. However, Viridy teaches **the key indicates whether the associated entity represents a corporation, a person, a geographical characteristic of the associated entity** (col. 2, lines 16-17, 27-28, col. 3, lines 1-11, col. 5, lines 33-35). Thus, it would have been obvious to one of ordinary

skill in the art at the time the invention was made to combine the teachings of the cited references to implement a step of the key indicates whether the associated entity represents a corporation, a person, a geographical characteristic of the associated entity as disclosed by Viridy. This would allow users of Chipman's system and Hegli's system to reduce search time as suggested by Viridy (see col. 1, lines 14-17).

As per claim 15, Hegli teaches wherein the first miner outputs at least a first key representing whether the associated entity is pornography, and second through fifth miners operate on data in the data store to respectively generate second through fifth keys respectively representing whether an associated entity is a high quality entity (see Figs. 3, 6). Chipman and Hegli do not explicitly teach **whether an associated entity represents a corporation, whether an associated entity represents a person, and a geographical characteristic of an associated entity** (col. 2, lines 16-17, 27-28, col. 3, lines 1-11, col. 5, lines 33-35). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to implement a step of the key indicates whether the associated entity represents a corporation, a person, a geographical characteristic of the associated entity as disclosed by Viridy. This would allow users of Chipman's system and Hegli's system to reduce search time as suggested by Viridy (see col. 1, lines 14-17).

Claims 18, 28, 31, 45-48 and 51 have similar limitations as claims 12-15; therefore, they are rejected under the same subject matter.

7. Claims 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chipman et al (US Patent Application No. 2002/0091923 A1) as applied to claim 1 above, and further in view of Newell et al (US Patent Application No. 2003/0112270 A1). As per claim 54, Chipman does not explicitly teach wherein the output of the second miner is useful for identifying at least one linking entity for expanding a scope of a litigation discovery request. However, Newell teaches wherein the output of the second miner is useful for identifying at least one linking entity for expanding a scope of a litigation discovery request (par. 0020, 0037, 0039, 0055). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to implement the step of the output of the second miner is useful for identifying at least one linking entity for expanding a scope of a litigation discovery request as disclosed by Newell. This would allow users of Chipman's to easily and quickly locate to a desired discovery web page to search for litigation information related to the litigation case according to the user specific search request, as suggested by Newell (par. 0020, 0136-0137, 0141).

Response to Arguments

Applicant's arguments filed 3/29/05 have been fully considered but they are not persuasive.

Applicant's amended claims 1 and 34 to recite the new limitation "creating" instead of "establishing" and alleged this would overcome the Office Action rejection

dated March 24, 2005 because claims 1 and 34 now explicate "creating" a miner in response to a user search request.

In response, examiner respectfully disagrees. Examiner submits that the Chipman's invention does still read on claims 1 and 34 at paragraph 53 and 63 and Figure 3 that *a user submitting a search request, as an HTML page 306, the search request HTML page 306 are parsed and added to knowledge base*. Thus, when the request is parsed and stored, it would equivalent to the claim limitation "creating a miner in response to a user request information". Thus, this would not overly broad interpretation as argued by the applicant. Applicant obviously has failed to identify specific claim limitation that would define a clearly patentable distinct over Chipman.

Applicant argued that Chipman does not teach tagging a representation of a Web page.

With respect to the claim 21, "tagging a representation of a Web page" of the instant application can be read by Chipman's invention as *a Web page (i.e., an HTML) with the appropriate tags (par. 13, last 8 lines), wherein the HTML includes a "class" identifier (see par. 13, first 6 lines). Instead of storing all possible information from each Web page in the storage collection of information, the catalog may only store some information such as "class", "attribute". Thus, an HTML includes a "class", the "class" is stored in the catalog that allow a user to search for and identify the accessed item (par. 16).*

In addition, Applicant argued that Hegli does not teach tagging Web pages with a key representing a characteristic of the Web page. Applicant admitted that each Web

page is scored (Hegli, col. 4, line 17). However, there is no suggestion that the scored are tagged or appended to representation of the Web pages from which the scores are derived.

With respect to the above allegation, examiner respectfully submits Chipman discloses at col. 8, lines 5-6, 51-54 Fig. 3 that "The category identification table 205 also includes an alpha and beta score that provide the cut-off values for assigning a particular page to the selected category...the Sport category includes and alpha score of 920 and beta score of 810. If an Internet page is found to have a page relevance score of greater than 920", that page is assigned (flagged) for the Sport category. Therefore, using a predetermined alpha value for a particular category to determine whether a particular Web page is assigned to which category (Fig. 3, # 205), wherein each category represents for a particular types of Web pages (i.e., Sports Web pages, Leisure Web pages). From the above passages, Hegli does teach the claimed language "tagging Web pages with a key representing a characteristic of the Web page" because tagging Web pages with a key or tagging a category with a key are interchangeable since each category represents for a particular types of Web pages as taught by Hegli.

Applicant argued there is no motivation to combine the references because the suggestion to combine comes from a secondary references, it does not bear some relevance to the primary reference.

In response, examiner respectfully disagrees. Examiner submits there is not only suggestion to combine come from a secondary reference, but also comes from a primary reference, since, the primary reference discloses "MLS is limited to real estate

agents only. Independent sellers and buyers cannot list and retrieve the listing available in MLS" (see Chipman, par. 9). Therefore, tagging the result output by the first data miner with a key representing at least one characteristic of at least one entity in the knowledge database (i.e., for used by real estate agents only) in order to prevent users without legitimate reasons for accessing the desired data such as multiple listing service (MLS).

Conclusion

THIS ACTION IS MADE FINAL. 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 mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEBBIE M. LE whose telephone number is (571) 272-4111. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN BREENE can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

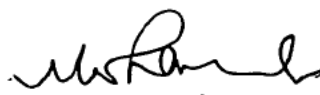
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through 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).



DEBBIE M LE
Examiner
Art Unit 2167

Debbie Le

June 6, 2005.


MOHAMMAD ALI
PRIMARY EXAMINER

Form PTO-1449
U.S. Department of Commerce
Patent and Trademark Office



Docket No.: ARC920020011US1
Serial No.: 10/141,686
Applicant: DENESUK et al.
Filing Date: May 8, 2002

INFORMATION DISCLOSURE CITATION

U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Sub-Class	Filing Date
<i>DL</i>	6,769,016 B2	08/2004	Rothwell et al.	709	206	

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION YES OR NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

<i>DL</i>	Thuraisingham et al., "Understanding data mining and applying it to command, control, communications and intelligence environments", Computer Software and Applications Conference, 2000. The 24 th Annual International, 25-27 Oct. 2000, pages 171-175.
<i>DL</i>	Related application, attorney docket no. ARC920020002US1 - Denesuk et al., "Knowledge-Based Data Mining System", application serial number 10/141,327 filed May 8, 2002.
<i>DL</i>	Related application, attorney docket no. ARC920020012US1 - Denesuk et al., "Knowledge-Based Data Mining System", application serial number 10/141,686 filed May 8, 2002.

Examiner: *DL*

Date Considered: 6/3/05

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

Index of Claims



Application/Control No.

10/141,686

Examiner

DEBBIE M. LE

Applicant(s)/Patent under Reexamination

DENESUK ET AL.

Art Unit

2167

X	Rejected
=	Allowed

-	(Through numeral) Cancelled
+	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim	Date
Final	Original
1	x
2	x
3	x
4	x
5	x
6	x
7	x
8	x
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11	x
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Claim	Date
Final	Original
51	x
52	x
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Claim	Date
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Search Notes

Application/Control No.

10/141,686

Examiner

DEBBIE M. LE

Applicant(s)/Patent under
Reexamination

171

Art Unit

2167

SEARCHED

Class	Subclass	Date	Examiner
707	1-10		
	100-102		
709	206,218	6/6/2005	DL

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner

**SEARCH NOTES
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
east search	6/6/2005	DL

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	46	(crawl\$3 spider\$3) same (web adj page\$1 page\$1) same (categor\$3 classif\$9 filter\$3) and "707"/\$.ccls. and @rlad<="20020508"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/06/06 10:39
L2	14	(crawl\$3 spider\$3) same (web adj page\$1 page\$1) same (categor\$3 classif\$9 filter\$3) and "709"/\$.ccls. and @rlad<="20020508"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/06/06 10:39

2/16/7
EFW



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Denesuk et al.) Art Unit: 2167
Serial No.: 10/141,686) Examiner: Le
Filing Date: May 8, 2002) Case No. #: ARC920020011US1
For: **KNOWLEDGE-BASED DATA MINING SYSTEM**) March 28, 2005
750 "B" Street, Suite 3120
San Diego, CA 92101
Customer No. 24955

TRANSMITTAL LETTER AND SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
Alexandria, VA 22313

Dear Sir:

Pursuant to Sections 1.97, 1.98, and 1.99 of the Rules of Practice in patent cases, enclosed are copies of the references cited on the "List of References Cited by Applicant," Form PTO-1449, submitted herewith.

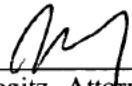
- (1) PTO Form 1449;
- (2) 3 References;
- (3) An acknowledgment postcard.

The commissioner is hereby authorized to charge Deposit Account No. 09-0441 in the amount of \$180. A duplicate copy of this transmittal is attached.

Respectfully submitted,

03/31/2005 EAREGAY1 00000044 090441 10141686

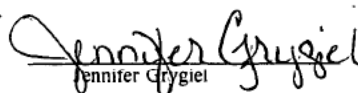
01 FC:1806 180.00 DR


John L. Rogitz, Attorney of Record
Registration No. 33,549
750 "B" Street, Suite 3120
San Diego, CA 92101 Telephone: (619) 338-8075

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service, First Class Mail, postage fully prepaid, under 37 CFR 1.8, addressed to Box Amendment, Commissioner for Patents, Alexandria, VA 222313 on March 29, 2005.

Date Signed: March 29, 2005


Jennifer Grygiel

Form PTO-1449
U.S. Department of Commerce
Patent and Trademark Office



Docket No.: ARC920020011US1
Serial No.: 10/141,686
Applicant: DENESUK et al.
Filing Date: May 8, 2002

INFORMATION DISCLOSURE CITATION

U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Sub-Class	Filing Date
	6,769,016 B2	08/2004	Rothwell et al.	709	206	

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION YES OR NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Thuraisingham et al., "Understanding data mining and applying it to command, control, communications and intelligence environments", Computer Software and Applications Conference, 2000. The 24 th Annual International, 25-27 Oct. 2000, pages 171-175.
	Related application, attorney docket no. ARC920020002US1 - Denesuk et al., "Knowledge-Based Data Mining System", application serial number 10/141,327 filed May 8, 2002.
	Related application, attorney docket no. ARC920020012US1 - Denesuk et al., "Knowledge-Based Data Mining System", application serial number 10/141,686 filed May 8, 2002.

Examiner:

Date Considered:

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

RECEIVED
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MAR 29 2005

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Applicant: Denesuk	)	Art Unit: 2167
	)	
Serial No.: 10/141,686	)	Examiner: Le
	)	
Filed: May 8, 2002	)	ARC920020011US1
	)	
For: KNOWLEDGE-BASED DATA MINING SYSTEM	)	March 29, 2005
	)	750 B STREET, Suite 3120
	)	San Diego, CA 92101
	)	

RESPONSE TO OFFICE ACTIONCommissioner of Patents and Trademarks
Washington, DC 20231

Dear Sir:

In response to the Office Action dated March 24, 2005, please amend the above-captioned application as follows.

1053-135.AMD

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
March 29, 2005
Page 2

PATENT
Filed: May 8, 2002

1. (currently amended) A method for data mining, comprising:
crawling the Internet to return Web pages to a data store;
accessing the data store with at least a first data miner to process data in the store and output
at least one result;
receiving a customer request for information;
~~establishing~~ creating at least a second data miner in response to the customer request for
information, the second data miner accessing at least the result of the first data miner to generate an
output; and
at least partially based on the output of the second data miner, responding to the customer
request for information.
2. (original) The method of Claim 1, comprising billing the customer for responding to the
customer request for information.
3. (currently amended) The method of Claim 1, wherein the method is provided to the customer
as a service, and the acts of crawling, accessing, receiving, ~~establishing~~ creating, and responding are
undertaken at a vendor facility.
4. (original) The method of Claim 1, further comprising providing at least one software product
to the customer, the product being useful for undertaking at least the acts of accessing the result of the first
data miner and responding to the customer request for information at a customer facility.

1053-135.AMD

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
March 29, 2005
Page 3

PATENT
Filed: May 8, 2002

5. (original) The method of Claim 4, wherein the product is useful for undertaking at least the acts of accessing the data store with at least the first data miner and receiving the customer request for information.

6. (original) The method of Claim 1, wherein the result output by the first data miner includes at least one key representing at least one characteristic of at least one entity in the data store.

7. (original) The method of Claim 6, wherein the key is added to a table having therein plural entities, at least some entities having at least one attribute.

8. (original) The method of Claim 6, wherein the value of the key is a binary value.

9. (original) The method of Claim 6, wherein the value of the key is a non-binary value.

10. (original) The method of Claim 6, wherein the key represents whether the associated entity is pornography.

11. (original) The method of Claim 6, wherein the key represents whether the associated entity is a high quality entity.

1053-135.AMD

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
March 29, 2005
Page 4

PATENT
Filed: May 8, 2002

12. (original) The method of Claim 6, wherein the key indicates whether the associated entity represents a corporation.

13. (original) The method of Claim 6, wherein the key represents whether the associated entity represents a person.

14. (original) The method of Claim 6, wherein the key represents a geographical characteristic of the associated entity.

15. (original) The method of Claim 6, wherein the first miner outputs at least a first key representing whether the associated entity is pornography, and second through fifth miners operate on data in the data store to respectively generate second through fifth keys respectively representing whether an associated entity is a high quality entity, whether an associated entity represents a corporation, whether an associated entity represents a person, and a geographical characteristic of an associated entity.

16. (original) The method of Claim 6, wherein the entity represents a Web page.

17. (original) The method of Claim 6, wherein the entity represents a hyperlink.

1053-135.AMD

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
March 29, 2005
Page 5

PATENT
Filed: May 8, 2002

18. (original) The method of Claim 6, wherein the entity represents at least one of: a corporation, a demographic group, a geographic region.

19. (original) The method of Claim 1, wherein the data miner includes rules for generating the result.

20. (original) The method of Claim 1, wherein the result of the miner is useful for generating at least one index of the data store.

21. (original) A system for responding to customer requests for information, comprising:
at least one data store holding information representing at least Web pages;
at least one lower level data mining element receiving information from the data store and based thereon tagging at least one representation of a Web page with at least one key representing at least one characteristic of the Web page; and
at least one higher level data mining element using the key to output a result useful for responding to a request for information.

22. (original) The system of Claim 21, wherein the result output by the higher level data mining element is a key representing at least one characteristic of a Web page.

1053-135.AMD

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
March 29, 2005
Page 6

PATENT
Filed: May 8, 2002

23. (original) The system of Claim 21, further comprising at least one Web crawler populating the data store.

24. (original) The system of Claim 21, wherein the data mining elements are executed at a vendor facility, and the customer requests for information are responded to in a service format.

25. (original) The system of Claim 21, wherein at least the higher level data mining element is executed at a customer facility.

26. (original) The system of Claim 21, wherein the value of the key is a binary value.

27. (original) The system of Claim 21, wherein the value of the key is a non-binary value.

28. (original) The system of Claim 21, wherein the key represents at least one of: whether an associated entity representative of a Web page in the data store is pornography, whether the associated entity is a high quality entity, whether the associated entity represents a corporation, whether the associated entity represents a person, and a geographical characteristic of the associated entity.

29. (original) The system of Claim 21, wherein at least some entities in the data store represent Web pages.

1053-135.AMD

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
March 29, 2005
Page 7

PATENT
Filed: May 8, 2002

30. (original) The system of Claim 29, wherein at least some entities represent hyperlinks.

31. (original) The system of Claim 30, wherein at least some entities represent at least one of:
a corporation, a demographic group, a geographic region.

32. (original) The system of Claim 21, wherein the data mining element includes rules for
generating the key.

33. (original) The system of Claim 21, wherein the mining element is useful for generating at
least one index of the data store.

34. (currently amended) An information service, comprising:
means for accessing, with at least a first data miner, a data store containing information
representing at least one Web page to process data in the store and output at least one result;
means for receiving a customer request for information;
means for creating ~~establishing~~ at least a second data miner in response to the customer
request for information, the second data miner accessing at least the result of the first data miner to
generate an output; and
means for responding to the customer request for information at least partially based on the
output of the second data miner.

1053-135.AMD

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
March 29, 2005
Page 8

PATENT
Filed: May 8, 2002

35. (original) The service of Claim 34, comprising means for billing the customer for responding to the customer request for information.

36. (currently amended) The service of Claim 34, wherein the service is provided to the customer as a service, and the means for accessing, receiving, ~~establishing~~ creating, and responding are executed at a vendor facility.

37. (original) The service of Claim 34, wherein at least one software product is provided to the customer, the product being useful for executing at least the means for accessing the result of the first data miner and responding to the customer request for information at a customer facility.

38. (original) The service of Claim 37, wherein the product is useful for executing at least the means for accessing the data store with at least the first data miner and receiving the customer request for information.

39. (original) The service of Claim 34, wherein the result output by the first data miner includes at least one key representing at least one characteristic of at least one entity in the data store.

40. (original) The service of Claim 39, further comprising means for adding the key to a table having therein plural entities, at least some entities having at least one attribute.

1053-135.AMD

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
March 29, 2005
Page 9

PATENT
Filed: May 8, 2002

41. (original) The service of Claim 39, wherein the value of the key is a binary value.
42. (original) The service of Claim 39, wherein the value of the key is a non-binary value.
43. (original) The service of Claim 39, wherein the key represents whether the associated entity is pornography.
44. (original) The service of Claim 39, wherein the key represents whether the associated entity is a high quality entity.
45. (original) The service of Claim 39, wherein the key indicates whether the associated entity represents a corporation.
46. (original) The service of Claim 39, wherein the key represents whether the associated entity represents a person.
47. (original) The service of Claim 39, wherein the key represents a geographical characteristic of the associated entity.

1053-135.AMD

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
March 29, 2005
Page 10

PATENT
Filed: May 8, 2002

48. (original) The service of Claim 39, wherein the first miner outputs at least a first key representing whether the associated entity is pornography, and second through fifth miners operate on data in the data store to respectively generate second through fifth keys respectively representing whether an associated entity is a high quality entity, whether an associated entity represents a corporation, whether an associated entity represents a person, and a geographical characteristic of an associated entity.

49. (original) The service of Claim 39, wherein the entity represents a Web page.

50. (original) The service of Claim 39, wherein the entity represents a hyperlink.

51. (original) The service of Claim 39, wherein the entity represents at least one of: a corporation, a demographic group, a geographic region.

52. (original) The service of Claim 34, wherein the data miner includes rule means for generating the result.

53. (original) The service of Claim 52, further comprising means for generating at least one index of the data store at least partially based on the result of the miner.

54. (original) The method of Claim 1, wherein the output of the second miner is useful for identifying at least one linking entity for expanding a scope of a litigation discovery request.

1053-135.AMD

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
March 29, 2005
Page 11

PATENT
Filed: May 8, 2002

Remarks

Reconsideration of the above-captioned application is respectfully requested. Independent Claims 1 and 34 and dependent Claims 3-5, 19, 20, 32-34, 36-38, 52, and 53 have been rejected under 35 U.S.C. §102 as being anticipated by Chipman et al., USPP 2002/0091923, now USPN 6,799,174, and independent Claim 21 and dependent Claims 6-11, 16, 17, 22-27, 29, 30, 39-44, 49, and 50 have been rejected under 35 U.S.C. §103 as being unpatentable over Chipman et al. in view of Hegli et al., USPN 6,606,659. Dependent Claims 2 and 35 have been rejected as being unpatentable over Chipman et al. in view of Jaramillo, USPP 2002/0049773, and dependent Claims 12-15, 18, 28, 31, 45-48, and 51 have been rejected as being unpatentable over Chipman et al. in view of Hegli et al. and further in view of Virdy, USPN 6,691,105. Claim 54 has been rejected based on Chipman in view of Newell et al., USPP 2003/0112270.

The fact that Applicant has focussed its comments distinguishing the present claims from the applied references and countering certain rejections must not be construed as acquiescence in other portions of rejections not specifically addressed.

To overcome the rejections, Claims 1 and 34 now recite "creating" a second miner instead of "establishing" it, as disclosed on, e.g., page 17, line 5. This overcomes Chipman et al. because in the relied-upon section (paragraph 52) of Chipman et al. alleged to teach "establishing a miner in response to a user request for data", no new miners are created. Rather, the request is passed to pre-existing search engines, and this is repeated in paragraphs 53 and 56 of Chipman et al. Thus, even if the examiner had been reading, legitimately or not, "establishing a miner" to mean "picking a pre-existing search engine", this overly broad interpretation simply cannot now hold now since Claims 1 and 34 explicate "creating" a miner in response to a user search request.

1053-135.AMD

CASE NO.: ARC920020011US1
Serial No.: 10/141,686
March 29, 2005
Page 12

PATENT
Filed: May 8, 2002

With respect to the obviousness rejection of Claim 21, it has been alleged that Chipman et al. "tags" a representation of a Web page at figure 6, numbers 617, 619 and page 7, paragraph 74, evidently relying on the RIDB, but this is incorrect. Chipman et al. stores strings in the RIDB which is separate from the Web pages found by the crawler; thus, no representation of the Web pages ever is "tagged" with anything, since "tag" clearly connotes "append". Moreover, the allegation that Hegli et al. teaches tagging Web pages with "keys" at col. 4, lines 21-29 and col. 9, lines 13-20 similarly is factually wrong. In the relied-upon section of column 4 Hegli et al. discusses a seeming irrelevancy, namely, that a training database includes lexical words. The relied-upon portion of column 9 discloses only that words are given relevance scores that are used to classify documents, but there is absolutely no teaching or suggestion that the scores are appended to representations of the Web pages from which the scores are derived. The allegation to the contrary simply reads something into Hegli et al. that is not there. While Applicant appreciates that claims should be broadly construed during prosecution, they may be only so broadly construed as a skilled artisan would interpret them, MPEP §2111.01. The general rule for broad construction thus has limits: it is not a license to distort the English language, nor is it a dispensation to conjure non-existent teachings in references the authors of which had no idea existed.

Additionally, the proposed combinations of references fail to find prior art motivation. By way of non-limiting example, the proffered suggestion to alter Chipman et al. with Hegli et al. - to "allow administrators to prevent an end-user accessing site such as pornography", bears no relevance to Chipman et al., which is an information retrieval system that does not appear to be concerned at all with the spam/pornography access control of Hegli et al. Thus, while a suggestion to combine may come from a secondary reference, it must bear some relevance to the primary reference; a feature of a secondary reference

1053-135.AMD

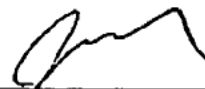
CASE NO.: ARC920020011US1
Serial No.: 10/141,686
March 29, 2005
Page 13

PATENT
Filed: May 8, 2002

cannot be applied to a primary reference in a vacuum if that feature is relevant to only the secondary reference.

The Examiner is cordially invited to telephone the undersigned at (619) 338-8075 for any reason which would advance the instant application to allowance.

Respectfully submitted,



John L. Rogitz
Registration No. 33,549
Attorney of Record
750 B Street, Suite 3120
San Diego, CA 92101
Telephone: (619) 338-8075

JLR:jg

1053-135.AMD

BEST AVAILABLE COPY

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 2001

Application or Docket Number

10/4/686

CLAIMS AS FILED - PART I

SMALL ENTITY TYPE ☐ OR

OTHER THAN SMALL ENTITY

	(Column 1)	(Column 2)
TOTAL CLAIMS	64	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	64 minus 20 =	* 34
INDEPENDENT CLAIMS	3 minus 3 =	* -
MULTIPLE DEPENDENT CLAIM PRESENT ☐		

RATE	FEE		RATE	FEE
BASIC FEE	370.00	OR	BASIC FEE	740.00
X\$ 9=		OR	X\$18=	612
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL		OR	TOTAL	1352

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

SMALL ENTITY TYPE ☐ OR

OTHER THAN SMALL ENTITY

	(Column 1)		(Column 2)	(Column 3)
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	* 54	Minus	** 54	= X
Independent	* 3	Minus	*** 3	= X
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

RATE	ADDI-TIONAL FEE		RATE	ADDI-TIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL		OR	TOTAL	
ADDIT. FEE		OR	ADDIT. FEE	

	(Column 1)		(Column 2)	(Column 3)
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

RATE	ADDI-TIONAL FEE		RATE	ADDI-TIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL		OR	TOTAL	
ADDIT. FEE		OR	ADDIT. FEE	

	(Column 1)		(Column 2)	(Column 3)
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

RATE	ADDI-TIONAL FEE		RATE	ADDI-TIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL		OR	TOTAL	
ADDIT. FEE		OR	ADDIT. 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 number found in the appropriate box in column 1.



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.
10/141,686	05/08/2002	Matthew Denesuk	ARC920020011US1	9366

7590

03/24/2005

John L. Rogitz
Rogitz & Associates
Suite 3120
750 B Street
San Diego, CA 92101

EXAMINER

LE, DEBBIE M

ART UNIT

PAPER NUMBER

2167

DATE MAILED: 03/24/2005

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

Office Action Summary

Application No.

10/141,686

Applicant(s)

DENESUK ET AL.

Examiner

DEBBIE M LE

Art Unit

2177

-- 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 MONTH(S) 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 the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- 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 8 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ 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

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 May 2002 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).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ 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) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/8/02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 5/8/02 has been considered by the examiner. Please attached PTO-1449.

Drawings

2. The drawings were received on 5/8/02. These drawings are accepted.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

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 –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3-5, 19-20, 32-34, 36-38, 52-53 are rejected under 35 U.S.C. 102(e) as being anticipated by Chipman et al (USP Application No. 2002/0091923 A1).

As per claim 1, Chipman teaches a method for data mining, comprising:

'crawling the Internet to return Web pages to a data store' as a crawler scans the web for pages and stores in the knowledge base [See Fig. 2, Web crawler # 205, knowledge base # 206, web pages # 207-209, page 5, ¶ 0052, line 1-2];

'accessing the data store with at least a first data miner to process data in the store and output at least one result' as a crawler parses the received pages into character strings and stores the strings in reverse index database (hereinafter "RIDB") [See Fig. 6, # 617, # 619, page 7, ¶ 0074, lines 14-16];

'receiving a customer request for information' as a user supplies target values for the attributes of interest [See page 5, ¶ 0056, lines 1-2] or a user submitting a search request [See page 5, 0053, lines 2-3];

'establishing at least a second data miner in response to the customer request for information, the second data miner accessing at least the result of the first data miner to generate an output' as the search engine search the knowledge base 206 for results meeting various search criteria [See page 5, ¶ 0052, lines 12-17];
and

'at least partially based on the output of the second data miner, responding to the customer request for information' as a specific page is retrieved for information as requested by the user [See page 5, ¶ 0052, lines 11-12, page 8, 0074, lines 29-30].

As per claim 3, Chipman teaches provided to the customer as a service, and the acts of crawling, accessing, receiving, establishing, and responding are undertaken at a vendor facility (par. 0034, first 4 lines).

As per claim 4, Chipman teaches providing at least one software product to the customer, the product being useful for undertaking at least the acts of accessing the result of the first data miner and responding to the customer request for information at a customer facility (see par. 0034, make their information available for retrieval... such as information through Web pages in HTML, XML... Web-accessible storage media).

As per claim 5, Chipman teaches wherein the product is useful for undertaking at least the acts of accessing the data store with at least the first data miner and receiving the customer request for information (par. 0018).

As per claim 19, Chipman teaches wherein the data miner includes rules for generating the result (par. 0087).

As per claim 20, Chipman teaches wherein the result of the miner is useful for generating at least one index of the data store (par. 0052, 0054, 0063).

Claim 32 has similar limitations as claim 19; therefore, it is rejected under the same subject matter.

Claim 33 has similar limitations as claim 20; therefore, it is rejected under the same subject matter.

As per claim 34, Chipman discloses an information service, comprising:
means for accessing, with at least a first data miner, a data store containing information representing at least one Web page to process data in the store and output at least one result as a crawler scans the web for pages and stores in the knowledge base [See Fig. 2, Web crawler # 205, knowledge base # 206, web pages # 207-209, page 5, ¶ 0052, line 1-2];

means for receiving a customer request for information as a user supplies target values for the attributes of interest [See page 5, ¶ 0056, lines 1-2] or a user submitting a search request [See page 5, 0053, lines 2-3];

means for establishing at least a second data miner in response to the customer request for information, the second data miner accessing at least the result of the first data miner to generate an output as a crawler parses the received pages into character strings and stores the strings in reverse index database (hereinafter "RIDB") [See Fig. 6, # 617, # 619, page 7, ¶ 0074, lines 14-16] and the search engine search the knowledge base 206 for results meeting various search criteria [See page 5, ¶ 0052, lines 12-17]; and

means for responding to the customer request for information at least partially based on the output of the second data miner as a specific page is

retrieved for information as requested by the user [See page 5, ¶ 0052, lines 11-12, page 8, 0074, lines 29-30].

Claim 36 has similar limitations as claim 3; therefore, it is rejected under the same subject matter.

Claim 37 has similar limitations as claim 4; therefore, it is rejected under the same subject matter.

Claim 38 has similar limitations as claim 5; therefore, it is rejected under the same subject matter.

Claim 52 has similar limitations as claim 19; therefore, it is rejected under the same subject matter.

Claim 53 has similar limitations as claim 20; therefore, it is rejected under the same subject matter.

Claim Rejections - 35 USC § 103

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

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 2 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chipman et al (US Patent Application No. 2002/0091923 A1) as applied to claim 1 above, and further in view of Jaramillo (US Patent Application No. 2002/0049773 A1).

As per claims 2 and 5, Chipman does not explicitly teach billing the customer for responding to the customer request for information. However, Jaramillo teaches **billing the customer for responding to the customer request for information** (see par. 0026). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to implement the step of billing the customer for responding to the customer request for information as disclosed by Jaramillo. This would allow users of Chipman's system (i.e., engineers, designers, computer programmers, businesses) to make a profit in order to maintain

Art Unit: 2167

their system so that it continues to provide quick and efficient services and products which satisfy the needs of specific end-users, as suggested by Chipman (see par. 0006, 0010).

6. Claims 6-11, 16-17, 21-27, 29-30, 39-44, 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chipman et al (US Patent Application No. 2002/0091923 A1) as applied to claim 1 above, and further in view of Hegli et al (US Patent 6,606,659 B1).

As per claim 6, Chipman teaches organizing information of the plurality entities, such as business, organizations, etc. [See page 3, 0034, line 19, page 7, 0074, lines 16-17]. Chipman does not explicitly teach wherein the result output by the first data miner includes at least one key representing at least one characteristic of at least one entity in the data store. However, Hegli teaches **the result output by the first data miner includes at least one key representing at least one characteristic of at least one entity in the data store** (col. 4, lines 21-29, col. 9, lines 13-20). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Hegli's system with Chipman's system to tag the result output by the first data miner with a key representing at least one characteristic of at least one entity in the knowledge database as disclosed by Hegli. This would provide users of Chipman's system (such as administrators) to prevent an end-user accessing to sites, such as those containing pornography, that most parents or businesses desire to block, as suggested by Hegli (see col. 1, lines 24-35, 51-57).

As per claim 7, Hegli teaches wherein the key is added to a table having therein plural entities, at least some entities having at least one attribute (see Fig. 3).

As per claims 8-9, Hegli teaches wherein the value of the key is a binary value, no-binary key (see Fig. 3).

As per claim 10, Hegli teaches wherein the key represents whether the associated entity is pornography (see Fig. 3).

As per claim 11, Hegli teaches wherein the key represents whether the associated entity is a high quality entity (Fig. 6).

As per claim 16, Chipman teaches wherein the entity represents a Web page (par. 0036, 0085).

As per claim 17, Chipman teaches wherein the entity represents a hyperlink (par. 0036, 0086).

As per claim 21, Chipman discloses a system for responding to customer requests for information, comprising:

at least one data store holding information representing at least Web pages
as a crawler scans the web for pages and stores in the knowledge base [See Fig. 2, Web crawler # 205, knowledge base # 206, web pages # 207-209, page 5, ¶ 0052, line 1-2];

at least one lower level data mining element receiving information from the data store and based thereon tagging at least one representation of a Web page
as a crawler parses the received pages into character strings and stores the strings in reverse index database (hereinafter "RIDB") [See Fig. 6, # 617, # 619, page 7, ¶ 0074, lines 14-16] *and the search engine search the knowledge base 206 for results meeting various search criteria* [See page 5, ¶ 0052, lines 12-17]; **and**

at least one higher level data mining element using the key to output a result useful for responding to a request for information as a specific page is retrieved for information as requested by the user [See page 5, ¶ 0052, lines 11-12, page 8, 0074, lines 29-30].

Chipman teaches organizing information of the plurality entities, such as business, organizations, etc [See page 3, 0034, line 19, page 7, 0074, lines 16-17]. Chipman does not explicitly teach tagging at least one representation of a Web page with at least one key representing at least one characteristic of the Web page. However, Hegli teaches **tagging at least one representation of a Web page with at least one key representing at least one characteristic of the Web page** (col. 4, lines 21-29, col. 9, lines 13-20). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Hegli's system

with Chipman's system to tag the result output by the first data miner with a key representing at least one characteristic of at least one entity in the knowledge database as disclosed by Hegli. This would provide users of Chipman's system (such as administrators) to prevent an end-user accessing to sites, such as those containing pornography, that most parents or businesses desire to block, as suggested by Hegli (see col. 1, lines 24-35, 51-57).

As per claim 22, Hegli teaches wherein the result output by the higher level data mining element is a key representing at least one characteristic of a Web page (col. 4, lines 21-29).

As per claim 23, Chipman teaches at least one Web crawler populating the data store *as a crawler parses the received pages into character strings and stores the strings in reverse index database (hereinafter "RIDB")* [See Fig. 6, # 617, # 619, page 7, ¶ 0074, lines 14-16].

As per claim 24, Chipman teaches wherein the data mining elements are executed at a vendor facility, and the customer requests for information are responded to in a service format (par. 0034).

As per claim 25, Chipman teaches wherein at least the higher level data mining element is executed at a customer facility (par. 0034, 0062-0063).

Claims 26-27 have similar limitations as claims 8-9; therefore, they are rejected under the same rationale.

Claims 29-30 have similar limitations as claims 16-17; therefore, they are rejected under the same rationale.

Claims 39 has similar limitations as claim 6; therefore, it is rejected under the same rationale.

Claim 40 similar limitations as claim 7; therefore, it is rejected under the same rationale.

Claims 41-42 have similar limitations as claims 8-9; therefore, they are rejected under the same rationale.

Claims 43-44 have similar limitations as claims 10-11; therefore, they are rejected under the same rationale.

Claims 49-50 have similar limitations as claims 16-17; therefore, they are rejected under the same rationale.

7. Claims 12-15, 18, 28, 31, 45-48, 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chipman et al (US Patent Application No. 2002/0091923 A1) in view of Hegli et al (US Patent 6,606,659 B1) and further in view of Viridy (US Patent 6,691,105 B1).

As per claims 12-14, Chipman and Hegli do not explicitly teach wherein the key indicates whether the associated entity represents a corporation, a person, a geographical characteristic of the associated entity. However, Viridy teaches **the key indicates whether the associated entity represents a corporation, a person, a geographical characteristic of the associated entity** (col. 2, lines 16-17, 27-28, col. 3, lines 1-11, col. 5, lines 33-35). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to implement a step of the key indicates whether the associated entity represents a corporation, a person, a geographical characteristic of the associated entity as disclosed by Viridy. This would allow users of Chipman's system and Hegli's system to reduce search time as suggested by Viridy (see col. 1, lines 14-17).

As per claim 15, Hegli teaches wherein the first miner outputs at least a first key representing whether the associated entity is pornography, and second through fifth miners operate on data in the data store to respectively generate second through fifth keys respectively representing whether an associated entity is a high quality entity (see Figs. 3, 6). Chipman and Hegli do not explicitly teach **whether an associated entity represents a corporation, whether an associated entity represents a person, and**

a geographical characteristic of an associated entity (col. 2, lines 16-17, 27-28, col. 3, lines 1-11, col. 5, lines 33-35). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to implement a step of the key indicates whether the associated entity represents a corporation, a person, a geographical characteristic of the associated entity as disclosed by Viridy. This would allow users of Chipman's system and Hegli's system to reduce search time as suggested by Viridy (see col. 1, lines 14-17).

Claims 18, 28, 31, 45-48 and 51 have similar limitations as claims 12-15; therefore, they are rejected under the same subject matter.

8. Claims 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chipman et al (US Patent Application No. 2002/0091923 A1) as applied to claim 1 above, and further in view of Newell et al (US Patent Application No. 2003/0112270 A1).

As per claim 54, Chipman does not explicitly teach wherein the output of the second miner is useful for identifying at least one linking entity for expanding a scope of a litigation discovery request. However, Newell teaches wherein the output of the second miner is useful for identifying at least one linking entity for expanding a scope of a litigation discovery request (par. 0020, 0037, 0039, 0055). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to implement the step of the output of the second miner is useful for identifying at least one linking entity for expanding a scope of a

litigation discovery request as disclosed by Newell. This would allow users of Chipman's to easily and quickly locate to a desired discovery web page to search for litigation information related to the litigation case according to the user specific search request, as suggested by Newell (par. 0020, 0136-0137, 0141).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEBBIE M LE whose telephone number is (571) 272-4111. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN BREENE can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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).



DEBBIE M LE
Examiner
Art Unit 2167

Debbie Le

Mar. 18, 2005.

Form PTO-1449 (modified) LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT(S)' INFORMATION DISCLOSURE STATEMENT <i>(Use several sheets if necessary)</i>	Attorney Docket No. ARC920020011US1	Serial N .
	Applicant(s): DENESUK et al.	
	Filing Date: Herewith	Group Art Unit:

U.S. PATENT DOCUMENTS

Examiner Initials	Document No.	Date	Name	Class	Subclass	Filing Date

11046 U.S. PTO
10/14/86
05/08/88

FOREIGN PATENT DOCUMENTS

Examiner Initials	Document No.	Date	Country	Class	Subclass	Translation Yes No

PUBLICATIONS / OTHER ART

Examiner Initials	Citation
	PUBLICATION: "USING COLLABORATIVE FILTERING TO WEAVE AN INFORMATION TAPESTRY". Goldberg et al. Communications of the ACM, Vol. 35, No. 12, pp. 61-70. December, 1992.
Examiner 	Date Considered 3/17/05

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

Notice of References Cited	Application/Control No. 10/141,686	Applicant(s)/Patent Under Reexamination DENESUK ET AL.	
	Examiner DEBBIE M LE	Art Unit 2177	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,606,659 B1	08-2003	Hegli et al.	709/225
	B	US-6,691,105 B1	02-2004	Viridy, Ajaipal Singh	707/3
	C	US-6,839,707 B2	01-2005	Lee et al.	707/8
	D	US-6,292,894 B1	09-2001	Chipman et al.	713/168
	E	US-2002/0032740 A1	03-2002	Stern et al.	709/206
	F	US-2002/0052928 A1	05-2002	Stern et al.	709/218
	G	US-2002/0156779 A1	10-2002	Elliott et al.	707/6
	H	US-2002/0091671 A1	07-2002	Prokoph, Andreas	707/1
	I	US-2003/0112270 A1	06-2003	Newell et al.	345/738
	J	US-2002/0091923 A1	07-2002	Chipman et al.	713/168
	K	US-2002/0049773 A1	04-2002	Jaramillo, Kristin Madonna	707/104.1
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

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	N					
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NON-PATENT DOCUMENTS

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

CONFIRMATION NO. 9366

Bib Data Sheet

SERIAL NUMBER 10/141,686	FILING DATE 05/08/2002 RULE	CLASS 707	GROUP ART UNIT 2167	ATTORNEY DOCKET NO. ARC920020011US1
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APPLICANTS

Matthew Denesuk, San Jose, CA;
 Daniel Frederick Gruhl, San Jose, CA;
 Kevin Snow McCurley, San Jose, CA; Sridhar Rajagopalan, Saratoga, CA;
 Andrew S. Tomkins, San Jose, CA;

** CONTINUING DATA ***** *None m*

** FOREIGN APPLICATIONS ***** *None m*

IF REQUIRED, FOREIGN FILING LICENSE GRANTED
 ** 06/17/2002

Foreign Priority claimed 35 USC 119 (a-d) conditions met Verified and Acknowledged	☐ yes ☒ no ☐ yes ☒ no ☐ Met after Allowance <i>None m</i> Examiner's Signature Initials	STATE OR COUNTRY CA	SHEETS DRAWING 3	TOTAL CLAIMS 54	INDEPENDENT CLAIMS 3
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 Rogitz & Associates
 Suite 3120
 750 B Street
 San Diego, CA
 92101

TITLE
 Knowledge-based data mining system

FILING FEE	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time)
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Index of Claims



Application No.

10/141,686

Examiner

DEBBIE M LE

Applicant(s)

DENESUK ET AL.

Art Unit

2167

x	Rejected
=	Allowed

-	(Through numeral) Cancelled
+	Restricted

N	Non-Elected
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Claim		Date									
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Search Notes

Application No.

10/141,686

Examiner

DEBBIE M LE

Applicant(s)

DENESUK ET AL.

Art Unit

2167

SEARCHED

Class	Subclass	Date	Examiner
707	1-6, 10		
	104.1		
709	206,218	3/17/2005	DL

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner

**SEARCH NOTES
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
inventor name search	9/21/2004	
east search	3/17/2005	DL

PRINTER RUSH

(PTO ASSISTANCE)

Application : 10/141686 Examiner : Le GAU : 2107
From : T. McGILL Location : IDC FMF FDC Date : 11-14-05

Tracking # : epm 10/141686 Week Date : 10-10-05

DOC CODE	DOC DATE	MISCELLANEOUS
☒ 1449	<u>3-24-05</u>	☐ Continuing Data
☐ IDS		☐ Foreign Priority
☐ CLM		☐ Document Legibility
☐ IIFW		☐ Fees
☐ SRFW		☐ Other
☐ DRW		
☐ OATH		
☐ 312		
☐ SPEC		

[RUSH] MESSAGE: Please initial line through citation.

[XRUSH] RESPONSE: Completed.

INITIALS: ML

NOTE: This form will be included as part of the official USPTO record, with the Response document coded as XRUSH.

REV 10/04

Form PTO-1449 (modified)	Attorney Docket No. ARC920020011US1	Serial N .
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT(S)' INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	Applicant(s):	DENESUK et al.
	Filing Date: Herewith	Group Art Unit:

U.S. PATENT DOCUMENTS

Examiner Initials	Document No.	Date	Name	Class	Subclass	Filing Date

11046 U.S. PTO
10/14/05
10/14/05

FOREIGN PATENT DOCUMENTS

Examiner Initials	Document No.	Date	Country	Class	Subclass	Translation Yes No

PUBLICATIONS / OTHER ART

Examiner Initials	Citation
	PUBLICATION: "USING COLLABORATIVE FILTERING TO WEAVE AN INFORMATION TAPESTRY". Goldberg et al. Communications of the ACM, Vol. 35, No. 12, pp. 61-70. December, 1992.
Examiner	Date Considered 3/17/05

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

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	(search adj engine) same (litigat\$4 lawsuit\$1 court adj case\$1 legal adj action\$1) same (html hypertext link\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/18 09:03
L2	3	(search adj engine) same (litigat\$4 lawsuit\$1 court adj case\$1 legal adj action\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/18 09:06
L3	12	(display\$3 present\$3 output\$1 result\$1) same (litigat\$4 lawsuit\$1 court adj case\$1 legal adj action\$1) with (link\$1 hypertext html)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/18 09:26
L4	12	(display\$3 present\$3 output\$1 result\$1) same (litigat\$4 lawsuit\$1 court adj case\$1 legal adj action\$1) with (link\$1 hypertext link\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/18 09:21
L5	0	4 not 3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/18 09:21
L6	1	10/028060	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/18 09:27
L7	1	6 and search\$3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/18 09:27

10/141, 686

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	25	(search adj engine crawl\$3 quer\$3) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) same (litigat\$4 court adj case\$1 lawsuit\$1 legal\$8)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/17 17:24
L2	97	(search adj engine crawler\$1 spider\$1) with (web adj page\$1 html page\$1) same (classif\$3 organiz\$3 min\$4) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/17 17:29
L3	3	(search adj engine crawler\$1 spider\$1) with (web adj page\$1 html page\$1) same (classif\$3 organiz\$3 min\$4) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) and (litigat\$5)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/17 17:30
L4	7	(search adj engine crawler\$1 spider\$1) with (web adj page\$1 html page\$1) same (classif\$3 organiz\$3 min\$4) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) and (court near3 case\$1 lawsuit\$1 legal near3 action\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/17 17:34
L5	11	(search adj engine crawler\$1 spider\$1) with (web adj page\$1 html page\$1) same (classif\$3 organiz\$3 min\$4) and (litigat\$4 court near3 case\$1 lawsuit\$1 legal near3 action\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/17 17:55

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	31	(crawl\$3 spider\$3) same (web adj page\$1 page\$1) same (categor\$3 classif\$9 filter\$3) and "707"/\$.ccis. and @riad<="20020508" and (bill\$3 pay\$3 paid fee\$3 charg\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/16 17:18

2151
825



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Denesuk et al.	)	Art Unit:	2151
		)		
Serial No.:	10/141,686	)	Examiner:	Unk.
		)		
Filing Date:	May 8, 2002	)	Case No. #:	ARC920020011US1
		)		
For:	KNOWLEDGE-BASED DATA MINING SYSTEM	)	March 9, 2005	
		)	750 "B" Street, Suite 3120	
		)	San Diego, CA 92101	
		)		
		)	Customer No.	24955

TRANSMITTAL LETTER AND INFORMATION DISCLOSURE STATEMENT

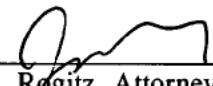
Commissioner for Patents
Alexandria, VA 22313

Dear Sir:

Pursuant to Sections 1.97, 1.98, and 1.99 of the Rules of Practice in patent cases, enclosed are copies of the references cited on the "List of References Cited by Applicant," Form PTO-1449, submitted herewith.

- (1) PTO Form 1449;
- (2) 2 References;
- (3) An acknowledgment postcard.

Respectfully submitted,

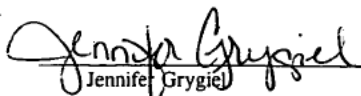


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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service, First Class Mail, postage fully prepaid, under 37 CFR 1.8, addressed to Box Amendment, Commissioner for Patents, Alexandria, VA 222313 on March 9, 2005.

Date Signed: March 9, 2005



Jennifer Grygiel



U.S. Department of Commerce
Patent and Trademark Office

Docket No.: ARC920020011US1
Serial No.: 10/141,686
Applicant: DENESUK et al.
Filing Date: May 8, 2002

INFORMATION DISCLOSURE CITATION**U.S. PATENT DOCUMENTS**

Examiner Initial	Document Number	Date	Name	Class	Sub-Class	Filing Date
	2002/0156779A1	10/2002	Elliott et al.	707	6	
	6,606,659 B1	08/2003	Hegli et al.	709	225	
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	5,737,592	4/1998	Nuguyen et al.	707	4	
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	2002/0091681	07/2002	Cras et al.	707	3	

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EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION YES OR NO
	EP 0797161A2	03/21/1997	European	G06F 17/30		
	EP 1111515A2	12/20/2000	European	G06F 17/30		
	EP 0797161A3	03/21/1997	European	G06F 17/30		

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Goldberg et al.: "Using Collaborative Filtering to Weave and Information Tapestry" Communication of the ACM, Vol. 35, No.12, pp. 61-70 December, 1992.
	Ganti v. et al.: "Mining Very Large Databases" Computer, IEEE Computer Society, Long Beach., CA, US vol.32, no.8, August 1999 (1999-08), pages 38-45, XP000923707, ISSN: 0018-9162

Examiner:	Date Considered:
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Examiner: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

	Type	L #	Hits	Search Text	DBs	Time Stamp
1	BRS	L1	1202	(search adj engine crawl\$3 quer\$3) same (internet www) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1)	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2004/07/08 12:01
2	BRS	L2	17	(search adj engine crawl\$3 quer\$3) same (internet www) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) same (data adj mining or data adj miner\$1 data near4 analyz\$3)	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2004/07/08 10:30
3	BRS	L3	215	(search adj engine crawl\$3 quer\$3) same (internet www) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) and (data adj mining or data adj miner\$1 data near4 analyz\$3)	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2004/07/08 11:54
4	BRS	L5	85	(search adj engine crawl\$3 quer\$3) same (internet www) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) and (data adj mining or data adj miner\$1 data near4 analyz\$3) and 707/\$.ccls. and Rlad<=20020528	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2004/07/08 10:32
5	BRS	L4	85	(search adj engine crawl\$3 quer\$3) same (internet www) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) and (data adj mining or data adj miner\$1 data near4 analyz\$3) and 707/\$.ccls.	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2004/07/08 11:36

	Type	L #	Hits	Search Text	DBs	Time Stamp
6	BRS	L6	0	6665658.uref.	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2004/07/08 11:44
7	BRS	L7	1	10/141686	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2004/07/08 11:44
8	BRS	L8	100	(search adj engine crawl\$3 quer\$3) same (internet www) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) and (data adj mining or data adj miner\$1 data near4 analyz\$3) and @rlad<=20020528	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2004/07/08 11:55
9	BRS	L9	68	8 not 5	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2004/07/08 11:55
10	BRS	L10	4457	(search adj engine crawl\$3 quer\$3 spider) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1)	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2004/07/08 12:02

	Type	L #	Hits	Search Text	DBs	Time Stamp
11	BRS	L11	331	(search adj engine crawl\$3 quer\$3 spider) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) same (min\$3 analyz\$ exam\$3 pars\$3 classif\$) with (web adj page\$1 html page\$1)	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2004/07/08 12:06
12	BRS	L12	320	(search adj engine crawl\$3 quer\$3 spider) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) same (min\$3 analyz\$ exam\$3 pars\$3 classif\$) with (web adj page\$1 html page\$1) and (quer\$3 access\$3 search\$3) with (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1)	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2004/07/08 12:07
13	BRS	L13	238	(search adj engine crawl\$3 quer\$3 spider) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) same (min\$3 analyz\$ exam\$3 pars\$3 classif\$) with (web adj page\$1 html page\$1) same (quer\$3 access\$3 search\$3) with (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1)	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2004/07/08 12:08
14	BRS	L14	85	(search adj engine crawl\$3 quer\$3 spider) same (web adj page\$1 html page\$1) same (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) same (min\$3 analyz\$ exam\$3 pars\$3 classif\$) with (web adj page\$1 html page\$1) same (quer\$3 access\$3 search\$3) with (storage\$1 data adj store\$1 database knowlege\$3 near2 base\$1) and @rlad<=20020528	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2004/07/08 12:08

05/08/02
JC843 U.S. PTO

05-09-02

1046 U.S. PTO
10/14/86
05/08/02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

UTILITY PATENT APPLICATION TRANSMITTAL
UNDER 37 CFR 1.53(b)

Address to: Assistant Commissioner for Patents Box Patent Application P.O. Box 2327 Arlington, VA 22202	Attorney Docket No.	ARC920020011US1
	Inventor(s)	DENESUK et al.
	Assignee Name:	International Business Machines Corporation
	Assignee Residence:	Armonk, New York
	Express Mail Label No.	EV078101554US
	Total Pages	47

Title of Application:

KNOWLEDGE-BASED DATA MINING SYSTEM

Transmitted with the patent application are the following:

- 1 Page(s) Transmittal form (plus one copy)
- 35 Page(s) Specification, claims, abstract
- 3 Page(s) Drawings
- 3 Page(s) Declaration and Power of Attorney
- 1 Page(s) Recordation Form Cover Sheet
- 2 Page(s) Assignment of the Invention to International Business Machines Corporation
- 1 Page(s) Information Disclosure Statement (IDS)
- 1 Page(s) Form PTO 1449 (Modified)
- 1 References as cited

This application is a: ☐ Continuation ☐ Divisional ☐ Continuation-in-Part of prior application Serial No.

Fee Calculation

	Claims Filed		Extra	Rate	Fees
Basic Fee					\$740.00
Total Claims	54	- 20 =	34	x \$18.00	612.00
Independent Claims	3	- 3 =	0	x \$84.00	00.00
Multiple Dependent Claim				+ \$260.00	
				Assignment	\$ 40.00
				TOTAL	\$1392.00

The Commissioner is hereby authorized to charge \$1392 to Deposit Account 09-0441 for fees required under 37 CFR 1.16 or 1.17.

EXPRESS MAIL CERTIFICATE

Respectfully submitted,

I hereby certify that the above paper/fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated below and is addressed to the Assistant Commissioner for Patents, Washington, DC 20231

Date of Deposit: May 8, 2002
Person mailing paper/fee: Jeanne Gahagan
Signature: Jeanne Gahagan

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KNOWLEDGE-BASED DATA MINING SYSTEM

I. Field of The Invention

The present invention relates generally to data mining systems.

II. Background of The Invention

5 Data mining is the process of extracting user-desired information from a corpus of information. Perhaps the most widespread example of data mining is the search engine capability incorporated into most Web browsers, which allows users to enter key words and which then return a list of documents (sometimes listing several thousands of documents) that the user then sifts through to find the information he or she desires.

10 Existing search engines such as AltaVista, Google, Northern Light, FAST, and Inktomi work by "crawling" the Web, i.e., they access Web pages and pages to which the accessed pages hyperlink, generating an inverted index of words that occur on the Web pages. The index correlates words with the identifications (referred to as "uniform resource locators", or "URLs") of pages that have the key words in them. Queries are
15 responded to by accessing the index using the requested key words as entering arguments, and then returning from the index the URLs that satisfy the queries. The page identifications that are returned are usually ranked by relevance using, e.g., link information or key word frequency of occurrence.

20 Despite the relevancy ranking used by most commercial search engines, finding particular types of information typically entails a great deal of mundane sifting through

query results by a person. This is because expertise in a particular area often is required to separate the wheat from the chaff. Indeed, as recognized by the present invention, it may be the case that one expert is required to process documents using his or her expert criteria to winnow out a subset of the documents, and a second expert must then use his or her expert criteria to locate the required information in the subset from the first expert. This is labor-intensive and mundane and, despite being merely a necessary precursor to the higher level work of using the data, can consume more time than any other phase of a project.

Consider, for example, responding to a complex marketing question, such as, "what do our commercial customers in the Pacific Northwest think of our competitor's health care products in terms of brand name strength and value?" An analysis of Web pages might begin with a key word search using the name of the competitor, but then considerable expert time would be required to eliminate perhaps many thousands of otherwise relevant documents, such as government reports, that might be useless in responding to the question. Many more documents might remain after the first filtering step that are even more afield, such as teenager chat room documents, that might mention the competitor's name but that would require expertise in what types of demographics constitute the targeted segment to eliminate.

Or consider the simple question, "Is Adobe Acrobat® compatible with MS Word®?" This simple query, posed to one of the above-mentioned search engines, yielded a results set of 33 *million* Web pages, most of which would not have contained the "yes" or "no" answer that is sought. Eliminating the useless pages would require an

expert to look at each page and determine whether it was the type of page that might contain information on program compatibility. Another expert might then be required to examine the pages passed on from the first expert to determine if, in fact, the pages contained the answer to the specific question that was posed. It will readily be appreciated that cascading expert rules to sift through a large body of information can consume an excessive amount of time.

SUMMARY OF THE INVENTION

A method for data mining includes crawling the Internet to return Web pages to a data store, and then accessing the data store with at least a first data miner to process data in the store and output at least one result. A customer request for information is received. At least a second data miner is established in response to the customer request for information, with the second data miner accessing at least the result of the first data miner to generate an output. Based on the output of the second data miner, to the customer request for information is fulfilled.

In a preferred embodiment, the customer is billed for responding to the customer request for information. The method may be provided to the customer as a service, and the acts of crawling, accessing, receiving, establishing, and responding are undertaken at a vendor facility. Or, a software product can be provided to the customer, with the product being useful for undertaking at least the acts of accessing the result of the first data miner and responding to the customer request for information at a customer facility. Moreover, if desired the software product provided to the customer can be used for

accessing the data store with at least the first data miner and receiving the customer request for information.

In any case, the result output by the first data miner may include at least one key representing at least one characteristic of at least one entity in the data store. The key
5 may be added to a data structure such as a table having therein plural entities, with at least some entities having at least one attribute. The value of the key can be a binary value or a non-binary value.

In particularly preferred, non-limiting embodiments, the key may represent whether the associated entity is pornography, or whether the associated entity is a high quality
10 entity, or whether the associated entity represents a corporation or person, or a geographical characteristic of the associated entity. The entity can represent a Web page, a hyperlink, a corporation, a demographic group, a geographic region, and so on.

In another aspect, a system for responding to customer requests for information includes a data store holding information representing at least Web pages, and at least
15 one lower level data mining element that receives information from the data store and based thereon tags at least one representation of a Web page with at least one key representing at least one characteristic of the Web page. At least one higher level data mining element uses the key to output a result useful for responding to a request for information.

20 The details of the present invention, both as to its structure and operation, can best be understood in reference to the accompanying drawings, in which like reference numerals refer to like parts, and in which:

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a block diagram of a preferred system architecture;

Figure 2 is a flow chart of the overall logic;

Figure 3 is a schematic diagram of a horizontal table;

5 Figure 4 is a schematic diagram of a vertical table; and

Figure 5 is a flow chart of an exemplary miner logic.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring initially to Figure 1, a system is shown, generally designated 10, for responding to customer requests for data. The system 10 essentially integrates the
10 knowledge of many experts to sift through a large corpus of data to respond to what might be relatively complex requests for information, such as those discussed above.

In non-limiting embodiments, the system 10 can be used for enterprise data analysis, competitive intelligence, trending, discovery, web portal services, clustering and taxonomy creation. Also, the system 10 can be used to support targeted functions which
15 require significant embedded expertise such as a suite of procurement-specific services (of interest to a particular part of the enterprise).

The system 10 can be hosted at a single vendor location on one or a cluster of processors to respond to customer requests for data in a service format. Or, portions of the system 10 can be provided to customers for execution of data mining at customer
20 facilities.

As set forth in further detail below, the system 10 includes a data gathering layer, a data storage layer, a data mining layer, a data presentation layer, and a system management layer. Commencing at the left in Figure 1 and first addressing the data gathering layer, a Web crawler 12 accesses the World Wide Web 14 (and if desired other portions of the Internet). Intranets 16, for example, may also be accessed by the crawler 12, including proprietary information available only through proper authentication. Preferably, the crawler 12 continuously crawls the Web 14, with some pages being crawled more often than others based on frequency of page updates and other criteria, and outputs the crawled pages to a data store 18 using a data layer application programming interface (API) 20. In one preferred, non-limiting embodiment, the interface 20 is IBM's service-oriented protocol known as "Vinci xTalk", which is a lightweight XML-based protocol coupled with a set of usage conventions covering monitoring, logging, and data transfer. Network-level APIs within the system are specified in terms of xTALK frames.

Also, the preferred crawler includes a feedback channel, whereby its operation may be changed as desired. In one preferred, non-limiting embodiment, the crawler 12 is that disclosed in U.S. Pat. No. 6,263,364, incorporated herein by reference, or the crawler set forth in IBM's co-pending U.S. patent application serial no. 09/239,921 entitled "SYSTEM AND METHOD FOR FOCUSSED WEB CRAWLING", also incorporated herein by reference. In addition to obtaining data using the crawler 12, the system 10 can include, if desired, a structured data gatherer 22 that processes data from

customer and third party databases 24 and sends the processed data to the data store 18.

With respect to the data store 18, in one embodiment the data store 18 is a relational database system (RDBMS) such as IBM's DB2 system. In other embodiments, other systems, such as file systems, can be used. The disclosure below applies to both types of data stores.

In one embodiment, the store 18 can include a centralized program executing on a single computer or on multiple computers. The below-described miners can execute on independent computers, making requests to the store program to read and write data. Alternatively, the store 18 can be distributed across multiple computers, with the miners executing in parallel on those computers. In such an embodiment, a document can be read from the local portion of the store into memory, passed through in-memory through a chain of dependent or independent miners, and written back into the store, to facilitate efficient use of resources. Indeed, both architectures might exist in the same system 10, recognizing that some miners operate better in the second architecture (e.g., miners that operate on a per-page basis) while other miners might require the additional overhead of the first architecture.

The data store 18 is associated with an indexer 26 and, if desired, a fast, semiconductor-implemented cache 28. A query processor 30 can access the cache 28, indexer 26, and data store 18 to execute miner queries as set forth below. Miner work queues, discussed below, can be implemented as part of the data storage layer of the system 10.

The data store 18 contains a relatively large corpus of data, e.g., Web page data from the crawler 12. Also, the data store 18 contains entities that represent the underlying data, as set forth further below. These entities have respective universal identities (UEIDs) that encode the entity identification and entity type, e.g., "web page", "hyperlink", "person", "corporation", "article". Also, entities can contain keys with associated key values as appended to the entities by the below-described data miners. The page entity, for example, is processed by a miner that creates a key called "Crawl:Content" which contains the http content of the associated webpage (the key value is thus relatively long). In any case, the entities can be stored in a file system, a database system such as DB2 in which they are represented in both horizontal and vertical tables, or other storage system.

The indexer 26 includes, among other things, indices of keys and key values found in the store. The indexer 26 can contain Boolean indices, which store "yes" or "no" values to queries of the form, "does key k have value v?" Also, the indexer 26 can contain range indices, which store ranges of key values, e.g., geographic ranges, text indices, which are conventional indices for the underlying data, and other indices as desired.

In any case, the preferred indices (and, when the data store is a database, the data storage tables) do not indicate where on, e.g., a Web page a particular name or text might occur, but only that a page has a particular characteristic, or that a particular textual element appears somewhere on the page. In this way, the relatively high granularity of the system 10 data store requires less storage space than would otherwise

be required, facilitating practical implementation. If desired, however, it may be indicated where on, e.g., a Web page a particular name or text might occur.

With respect to additional details of the data storage layer of the system 10, the preferred, non-limiting indexer 26 is a generalization of a conventional inverted file text
5 indexer. In one instantiation, it indexes web documents and provides a keyword search application programming interface (API) to the documents. The set of keywords associated with a document could be simply the words of the document, or it could be augmented by the miners discussed below with additional information as necessary, such as geographic locations on the page, proper names, references to products or
10 restaurants or other entities known to the system 10, results of semantic analysis of the page, and so forth. The keyword search API then allows queries to include any of these extended sets of keywords.

In other instantiations, the indexer 26 holds defined keys for a particular entity to allow boolean queries, or graph data to support inlink and outlink queries, and so forth.
15 To provide this generality, tokenization is decoupled from indexing. More particularly, the indexer 26 expects to receive a stream of tokens rather than a stream of documents. Accordingly, tokenizing is undertaken prior to indexing. With each indexed token, the token location (the token offset position in the stream) is stored along with user-defined token data, which can be arbitrary. This simplified model facilitates efficient indexing and
20 provides a general purpose API for use in a variety of applications. Moreover, decoupling allows tokens from different embodiments of rules (e.g., from different miners) to be indexed together.

Several versions of the indexer 26 may simultaneously execute. For simplicity, a "primary" text indexer is considered that holds tokens corresponding to the entire set of crawled pages. As discussed below in relation to the data miners of the present invention, miners attach "keys" to entities that are stored in the data store 18.

5 Tokenizers associated with the indexer 26 follow exactly this approach. In one non-limiting embodiment, the textual tokenizer can be based on the TAF (Text Analysis Framework) tokenizer produced by IBM Research and IBM Software in Boeblingen. This tokenizer reads page data, and writes for each page the result of base tokenization. Other tokenizers can then consume that data, or consume the raw page data as they
10 choose, and write other tokens to the store. For instance, a tokenizer might match proper names and tag them as such, and another might read only the output of the proper name tokenizer, and might write tokens containing metadata mapping proper names to particular known entities elsewhere in the system 10. All of these tokenizers register with the primary indexer 26.

15 Having set forth details of the preferred, non-limiting indexer 26, attention is directed to the query processor 30. Streams of data from the data store 18 may be requested by the below-described miners using an extensible query language to invoke the query processor 30. The paradigm for accessing the query processor 30 is exactly the same as the paradigm for accessing the indexer 26, i.e., the requester sends a
20 service-specific query (in this case, a statement in an extensible query language), and receives back from the query processor 30 a data stream. The query might involve combining several streams using standard stream combinators (boolean operators such

as AND and OR, database join operators such as inner and outer joins, sort operators, and operators that augment a stream with additional information by, e.g., augmenting each UEID in the stream with the value of a certain key). The query language can join together arbitrary streams.

5 As mentioned above, the data mining layer of the system 10 includes a miner library 32 that contains software-implemented data miners which communicate with the data layer API 20 and, hence, with the data storage layer. In the exemplary, non-limiting embodiment shown, the miner library 32 includes a link miner 34 which returns links to/from a page, a spam filter 36 for identifying "spam" in the data store 18, a porn filter
10 38 for identifying pornographic pages in the data store 18, a classification miner 42 that classifies pages based on the occurrence of patterns of terms in the pages, a geospatial miner 44 which identifies any geographic information on a Web page, a corporations miner 46, a taxonomies miner 48 that returns pages having a predefined taxonomy category, a regular expression (regex) miner 50 that provides a stream of pages
15 containing a defined regex, and so on.

By "miner" or "data mining element" is meant an analysis engine that generates an output, and specifically an output that can include one or more keys representing characteristics of an entity, using a set of rules. These rules can be heuristically determined, and can include statistically-based rules. By way of non-limiting example,
20 the "porn filter" miner 38 might determine whether a Web page contains pornography using image analysis techniques, and append a key and Boolean key value to a page that indicates "porn=yes" or "porn=no". As one non-limiting example, the porn miner can

use the principles set forth in IBM's U.S. Pat. No. 6,295,559. Or, the corporations miner
 46 might determine whether a particular page is a corporate page using word association
 rules, URL analysis, or other method, and then append a key to the page that indicates
 the result of the miner's analysis. Yet again, the miner that establishes the spam filter
 5 36 can use, e.g., the principles set forth in IBM's U.S. Pat. No. 6,266,692 to append keys
 to Web pages or emails indicating whether they are "spam". Still further, the geospatial
 miner 44 might append a key to a Web page representing a latitude and longitude range
 associated with the subject or author of the page, based on rules for deriving such
 information. As one non-limiting example, the geospatial miner can use the principles
 10 set forth in IBM's U.S. Pat. No. 6,285,996. All of the above-referenced patents are
 incorporated herein by reference. It is to be appreciated that the particular types of
 miners and the particular rules employed by each miner may vary without affecting the
 scope or operation of the present invention.

In any case, the data miners are modular components that have specific input and
 15 output specifications. They may be written in any language, and may range from, e.g.,
 a few lines of simple perl to spot keywords, to tens of thousands of lines of code (or
 more) to perform complex distributed operations. Large problems may be broken into
 smaller pieces, each of which may be easily tackled by a single miner or miner writer.
 The resulting intermediate results can be easily viewed, checked and debugged, and
 20 may also be of independent interest to other miner writers. In this way, miners represent
 the service-oriented architecture equivalent of object-oriented design. Miners are
 specified in terms of the data, usually as indicated by the below-described keys, that

must be available when they start, and the data (including other keys) that they will create during successful processing.

Specifically, in a preferred embodiment a miner can consume work from a system-managed work queue, based on one or more dependencies that are specified by the miner. As an example, a miner ("Miner A") that is interested in processing pages that contain references to certain personalities or certain geographic locations might register a dependency on the geospatial miner 44 and a person miner. The work queue for Miner A will then be continuously updated to contain entities that have been processed by the geospatial and person miners as indicated by keys appended to the entities in the data store by the geospatial and person miners, but not yet by Miner A. After processing those entities, Miner A could append its own key or keys to the processed entities using, when the data store is a database, existing entity tables, or it could create new entities (with corresponding tables when the data store is implemented as a database), with each key representing a characteristic of the entity. Miners that extract references to particular products, brand names, people, industry segments, artists, and so forth operate in this mode.

On the other hand, a miner might not consume work from a queue, but rather might register freshness requirements with the below-described management system controlling how often and in what environment the miner must be run. Other miners that, for instance, run a weekly aggregate computation might ask the below-discussed management system to initiate one or more instances of the miner in order to complete

a weekly build of the resulting aggregate table or data structure, again using as input entities that have the appropriate keys appended to them.

Miners thus read long-running persistent and reliable streams of raw content, as well as processed data created by other miners, from the data store 18. These miners, and in fact many miners within the system 10, will consume and process data. The two models for data access discussed above include random access to a particular entity or set of entities, and stream access to an enumeration of entities. To perform a random access on the data store 18, a miner simply requests relevant pieces of the entity in question using the UEID. To receive a data stream, an enumeration is initiated by requesting data from the data store 18 using the indexer 26 or using the query processor 30. For instance, miners with more sophisticated data requirements may specify to the query processor 30 complex queries that may require access to multiple components, with query optimization being conventionally undertaken and streams of data generated in return. Such queries could entail database joins across multiple tables, index lookups including text search, range queries, geographic lookups, and composition of smaller result sets from many different sources within the system. Whether derived from the indexer 26 or query processor 30, enumerations provide persistence, and can be accessed either in serial or in parallel depending on the nature of the processing.

Miners write back the results of their processing to the data store 18 for other miners and end users to access. As discussed above, to write data back into the store 18 for other miners to access, a miner simply creates the new keys and values it wishes to attach to the entity, then perform a store write operation.

The results of a particular customer request for information as provided by the miners of the present invention may be presented on a data presentation layer 52. The results may be printed, or presented in audio-video form, or other form as desired. A cluster management subsystem layer 54 manages the above-discussed layers as more
5 fully set forth below. If desired, a customer interface 56 can access the data layer API 20 and customer databases 58, to facilitate entering and responding to customer requests for information.

In accordance with the presently preferred embodiment, the management subsystem layer 54 schedules, initiates, monitors, and logs operations within the various
10 components. End applications draw results from rendered tables, from the data store 18, or from real-time query-processing miners.

In a preferred, non-limiting embodiment, a large cluster of computers hosts the system 10 and management subsystem layer 54. In addition to managing the miners, the managements system 54 detects hardware and software failures in the cluster and
15 programmatically recovers from the failures, notifying system managers as appropriate. The management subsystem layer 54 also provides functionality such as relocation, load balancing and scheduling for each software component.

All system 10 events are gathered into a single information server, which maintains status, statistics, logging, and error codes from applications and infrastructure
20 components. Events are generated from a wide range of sources including error classes used by software components in the cluster, a DB2 event and log monitor associated with the data store 18, system and network monitoring components, and so-called

"Nanny" agents that are part of the management subsystem layer 54 and that execute on respective computers of the cluster.

The preferred "Nanny" agents start, stop, and monitor processes, and track computer resources, on their respective computers. They undertake and/or monitor "pings", disk utilization, memory utilization, processor utilization, kernel resource utilization (processes, sockets, etc), and process controls including start, stop, killall. "Nanny" agents also receive status from individual miners running on their respective computers, including log messages, error reports, statistics, number of waiting documents, number of processed documents per second, net document flow rate, processing rate in bytes or entities per second, and other miner-specific status reports.

Figure 2 sets forth the overall logic of system 10 operation discussed above. Commencing at block 60, the crawler 12 crawls the Web 14 to add data to the data store 18. If desired, the data store 18 can be augmented with data at block 62 from the databases 24 by means of the data gatherer 22.

Once the data store 18 contains data, the logic may flow to block 64, wherein at least some of the miners, which might be thought of as "low level" miners, access data and process it in accordance with the disclosure above. The low level miners write the results back to the data store 18. For example, filtering miners such as the SPAM filter 36 and porn filter 38 might process all Web pages in the data store 18 and write back respective keys to the corresponding entities indicating whether each site is SPAM or pornography. Moreover, a detag miner can be invoked on each page to process the

page contents by removing hypertext markup language (html) mark-ups, leaving only the raw text, and then append a "detag" key so indicating to each corresponding entity.

Moving to block 66, customer requests for information can be received. At block 68, additional low level miners can be written in response, or high level miners, if required and not yet written, can be created. High level miners can be thought of as miners that specify dependencies on the outputs of other miners, i.e., that require entities for processing that have been tagged with keys output by lower level miners.

An example of a higher level miner might be one that responds to the query, "what do our commercial customers in the Pacific Northwest think of our competitor's health care products in terms of brand name strength and value?" Such a miner might specify that it wishes to receive only pages from the Pacific Northwest, as indicated by a geospatial key appended to entities by the geospatial miner, and only if the competitor's name is featured in the entity, as indicated by a key appended to the entity by a proper name miner. Many such dependencies might be hypothesized, it being understood that the expert who might specify the dependencies of such a miner uses heuristics according to his or her expertise without having to know how the expert who wrote, e.g., the geospatial miner arrived at his or her solution. The results are provided to the customer at block 70 and the customer is billed, on a per request basis or on a subscription basis.

Figures 3 and 4 illustrate the structure of the horizontal and vertical tables that can be used when, by way of non-limiting example, the data store is implemented by a database system such as DB2. A horizontal table 72 is shown in Figure 3 wherein each

row 74 represents an entity. Each row has a UEID column 76, if desired a timestamp column 78, and plural key columns 80. In contrast, a vertical table 82 shown in Figure 4 includes plural rows 84, each including a single key column 86, UEID column 88, key code column 90 indicating the type of key, and a key value column 92 indicating the value of the key, e.g., Boolean value, range value, etc. A timestamp column 94 can be included if desired, indicating the time the associated entry was made in the table.

From the above discussion it is to be appreciated that the data store 18, by means of the tables 72, 82 in the database implementation, abstracts the layout of the actual data, so that the decision on which type of tables to use for a specific entity can be made to benefit performance for the access patterns that are expected to be typical for that entity. The preferred data store 18 also abstracts DB2's limits on row length by automatically using either VARCHARs or BLOBs to store values that are longer than the maximum row length. APIs are provided to help programmers access the DB2 database directly to write code that is independent of the physical layout of the data.

For example, the crawler 12 writes the Crawl:Content key, the Crawl:Header key, and a number of extracted metadata keys such as the URL, the fetch latency, the last date on which the page changed, the server, the HTTP return code, and so on. Within the data store 18 when implemented as a database, this information is all written into a single horizontal table with one column for each crawler key. It is written only by the crawler 12, but it may be read by any miner having permission. Miners requiring the content of a page need only ask for the value of the Crawl:Content key, and the data store 18 maps to the appropriate table.

To facilitate this computation, the data store 18 can if desired provide a data dictionary whose purpose is to provide information on the mapping of a key to an actual location within the relational database. In addition, it provides ancillary information such as the type and owner of the key. Miners that write multiple keys may write those keys
5 into a specific horizontal table so that many keys can be written in a single row update operation.

As mentioned above, a number of miners, including the crawler 12, operate most naturally at the page level to create and consume per-page information. However, other miners can also operate on entities other than raw pages. For instance, some miners
10 such as a link-based spam filter 36 operate on entire web sites to decide whether an entire site is spam or not. Other miners might operate on phrases, or on proper names, or company names, or places, restaurants, employers, and so forth. Each such category represents a separate entity, and requires its own set of horizontal and vertical tables (or other data storage structure) within the data store 18. Accordingly, in the same way
15 that the crawler 12 writes to a horizontal table within the page entity in the database implementation, the corporation miner 46 might populate a horizontal table for corporations. Other miners that wish to attach key-value pairs to corporations might access keys appended to entities by the corporation miner 46, and then write other keys into other data structure of the corporation entity.

20 Figure 5 shows a specific logic flow that might be followed when a Web page arrives from the crawler 12 at block 96. At block 98 a detag miner can be invoked to

process the page at block 100 by stripping html markups, leaving only the raw text, and appending a "detag" key so indicating to the entity.

Proceeding to block 102, other miners can receive the entity in accordance with principles set forth above by having the system manager 54 deliver the entity to such other miners based on the detag key. At block 104 the other miners process the data underlying the entity and can append their own keys to the entity's data structure entry, in, e.g., both the horizontal table representing the entity and the associated vertical table representing the key when the data store is implemented as a database. Also, some miners might extract information, e.g., a corporate name from, e.g., a page entity and create additional entity data storage structures (such as files or tables) representing such entities, e.g., corporation entities.

After initial miner processing, the logic can move to decision diamond 106, wherein it is determined whether still further miners, e.g., an n^{th} miner, has requested entities having predetermined keys. If all keys required as input by the n^{th} miner are present in an entity, the entity is provided to the n^{th} miner at block 108 by, e.g., placing the entity in the miner's work queue. The n^{th} miner then accesses the entity at block 110 by, e.g., accessing its work queue to process the entity and/or processing the underlying data of the entity. At block 112, the n^{th} miner outputs its own key or keys and enters these keys in the entity data structures as appropriate to associate the key or keys with the entity. Then, at block 114 a customer's miner can invoke other miners and/or access entities as appropriate to create a database containing information sought by the customer.

The system 10 described herein can be used for many specific customer applications. One such application is an "action link"/"drill note" application in which a document is fed into the system, and system miners identify important "entities" in the document (e.g., people, places, events) based on rules. A compilation miner in the system 10 then compiles a dossier or other form of information collection on each of these entities. The dossier (or equivalent) is then linked to the entity in the original document.

The dossier or equivalent may be a mini-portal for that entity, e.g., it may look like a Yahoo®-type directory specifically for that entity. Accordingly, if the entity is a person, one may have subcategories for that person consisting of addresses associated with that person, people associated with that person, locations associated with that person, industries associated with that person, publication about that person, etc. The entities that are selected to be "action-linked" are determined by the compilation miner, preferably in accord with a tunable propensity function or other rule that can be heuristically determined.

As another non-limiting example of how the system 10 can be used, a "Legal Leads Finder and Builder" application can include the above-mentioned "action links"/"drill notes" as one component, and also look for probability linkages between "entities," wherein the entities are contained in the data store 18, but at least some of the linkage elements sought may not be. As an example, consider a litigation case in which John Doe and Jane Smith (people entities) are both listed in a people entity data structure, but the data in the data store 18 contains no manifest relationship between

them. A Legal Leads Finder and Builder miner identifies the two entities as important entities based on a set of rules, and then determines whether other entities exist through which the two people entities might be related. For example, it might happen that both people are on the Board of a particular company or charity; they may have published a paper together; they may have been mentioned in the press as colleagues or partners in some kind of deal; and so on. In these cases, the linking entity (e.g., the company for which both John and Jane are Board members; the paper which they published together) may be regarded a "bridging entity" and be included in discovery requests.

Consequently, the discovery phase of litigation can be expanded to request not only documents pertaining directly to certain topics, people, or events, but also to locate documents that are relevant to the "bridging entities" through external data sources.

As another non-limiting example of how the system 10 can be used, a competitive product marketing application can be implemented. Information about a set of products can be fed into the system 10, and miners can be constructed to unambiguously identify and classify mentions of the product based on the context of the mention. For example, Tide® as a detergent product can be distinguished from the natural phenomena of tides. Also, a classification/profiler miner, preferably using statistical means to classify/profile a mention based on a set of previously classified/profiled mentions, is used to classify the context of the mentions. Further, a geography miner can be used to determine appropriate geographic linkages associated with the source in which the mention occurs. The application can then be made to provide a finely divided measure of the "ink" or

"buzz" that some set of their products are receiving and compare this "ink" or "buzz" with that corresponding to competitive products. This information can be presented on a map, for example, with different colors or brightness levels representing the magnitude of "ink" or "buzz." This information can also be tracked over time, assisting in the
5 identification of positive or negative trends that deserve attention. As another feature, geographically and demographically segmented data representing ad spending or other marketing activities associated with a product can be fed into a system, and a miner can test for forward correlations of such activities to "ink" or "buzz," thereby providing some measure of the effectiveness of the marketing activities.

10 While the particular KNOWLEDGE-BASED DATA MINING SYSTEM as herein shown and described in detail is fully capable of attaining the above-described objects of the invention, it is to be understood that it is the presently preferred embodiment of the present invention and is thus representative of the subject matter which is broadly contemplated by the present invention, that the scope of the present invention fully
15 encompasses other embodiments which may become obvious to those skilled in the art, and that the scope of the present invention is accordingly to be limited by nothing other than the appended claims, in which reference to an element in the singular is not intended to mean "one and only one" unless explicitly so stated, but rather "one or more". All structural and functional equivalents to the elements of the above-described
20 preferred embodiment that are known or later come to be known to those of ordinary skill in the art are expressly incorporated herein by reference and are intended to be encompassed by the present claims. Moreover, it is not necessary for a device or

method to address each and every problem sought to be solved by the present invention, for it to be encompassed by the present claims. Furthermore, no element, component, or method step in the present disclosure is intended to be dedicated to the public regardless of whether the element, component, or method step is explicitly recited in the claims. No claim element herein is to be construed under the provisions of 35 U.S.C. §112, sixth paragraph, unless the element is expressly recited using the phrase "means for" or, in the case of a method claim, the element is recited as a "step" instead of an "act".

WE CLAIM:

WHAT IS CLAIMED IS:

1 1. A method for data mining, comprising:
2 crawling the Internet to return Web pages to a data store;
3 accessing the data store with at least a first data miner to process data in
4 the store and output at least one result;
5 receiving a customer request for information;
6 establishing at least a second data miner in response to the customer
7 request for information, the second data miner accessing at least the result of the
8 first data miner to generate an output; and
9 at least partially based on the output of the second data miner, responding
10 to the customer request for information.

1 2. The method of Claim 1, comprising billing the customer for responding to
2 the customer request for information.

1 3. The method of Claim 1, wherein the method is provided to the customer
2 as a service, and the acts of crawling, accessing, receiving, establishing, and responding
3 are undertaken at a vendor facility.

1 4. The method of Claim 1, further comprising providing at least one software
2 product to the customer, the product being useful for undertaking at least the acts of

3 accessing the result of the first data miner and responding to the customer request for
4 information at a customer facility.

1 5. The method of Claim 4, wherein the product is useful for undertaking at
2 least the acts of accessing the data store with at least the first data miner and receiving
3 the customer request for information.

1 6. The method of Claim 1, wherein the result output by the first data miner
2 includes at least one key representing at least one characteristic of at least one entity
3 in the data store.

1 7. The method of Claim 6, wherein the key is added to a table having therein
2 plural entities, at least some entities having at least one attribute.

1 8. The method of Claim 6, wherein the value of the key is a binary value.

1 9. The method of Claim 6, wherein the value of the key is a non-binary value.

1 10. The method of Claim 6, wherein the key represents whether the associated
2 entity is pornography.

1 11. The method of Claim 6, wherein the key represents whether the associated
2 entity is a high quality entity.

1 12. The method of Claim 6, wherein the key indicates whether the associated
2 entity represents a corporation.

1 13. The method of Claim 6, wherein the key represents whether the associated
2 entity represents a person.

1 14. The method of Claim 6, wherein the key represents a geographical
2 characteristic of the associated entity.

1 15. The method of Claim 6, wherein the first miner outputs at least a first key
2 representing whether the associated entity is pornography, and second through fifth
3 miners operate on data in the data store to respectively generate second through fifth
4 keys respectively representing whether an associated entity is a high quality entity,
5 whether an associated entity represents a corporation, whether an associated entity
6 represents a person, and a geographical characteristic of an associated entity.

1 16. The method of Claim 6, wherein the entity represents a Web page.

1 17. The method of Claim 6, wherein the entity represents a hyperlink.

1 18. The method of Claim 6, wherein the entity represents at least one of: a
2 corporation, a demographic group, a geographic region.

1 19. The method of Claim 1, wherein the data miner includes rules for
2 generating the result.

1 20. The method of Claim 1, wherein the result of the miner is useful for
2 generating at least one index of the data store.

1 21. A system for responding to customer requests for information, comprising:
2 at least one data store holding information representing at least Web
3 pages;
4 at least one lower level data mining element receiving information from the
5 data store and based thereon tagging at least one representation of a Web page
6 with at least one key representing at least one characteristic of the Web page;
7 and
8 at least one higher level data mining element using the key to output a
9 result useful for responding to a request for information.

1 22. The system of Claim 21, wherein the result output by the higher level data
2 mining element is a key representing at least one characteristic of a Web page.

1 23. The system of Claim 21, further comprising at least one Web crawler
2 populating the data store.

1 24. The system of Claim 21, wherein the data mining elements are executed
2 at a vendor facility, and the customer requests for information are responded to in a
3 service format.

1 25. The system of Claim 21, wherein at least the higher level data mining
2 element is executed at a customer facility.

1 26. The system of Claim 21, wherein the value of the key is a binary value.

1 27. The system of Claim 21, wherein the value of the key is a non-binary value.

1 28. The system of Claim 21, wherein the key represents at least one of:
2 whether an associated entity representative of a Web page in the data store is
3 pornography, whether the associated entity is a high quality entity, whether the
4 associated entity represents a corporation, whether the associated entity represents a
5 person, and a geographical characteristic of the associated entity.

1 29. The system of Claim 21, wherein at least some entities in the data store
2 represent Web pages.

1 30. The system of Claim 29, wherein at least some entities represent
2 hyperlinks.

1 31. The system of Claim 30, wherein at least some entities represent at least
2 one of: a corporation, a demographic group, a geographic region.

1 32. The system of Claim 21, wherein the data mining element includes rules
2 for generating the key.

1 33. The system of Claim 21, wherein the mining element is useful for
2 generating at least one index of the data store.

1 34. An information service, comprising:
2 means for accessing, with at least a first data miner, a data store
3 containing information representing at least one Web page to process data in the
4 store and output at least one result;
5 means for receiving a customer request for information;

1 36. The service of Claim 34, wherein the service is provided to the customer
2 as a service, and the means for accessing, receiving, establishing, and responding are
3 executed at a vendor facility.

1 38. The service of Claim 37, wherein the product is useful for executing at least
2 the means for accessing the data store with at least the first data miner and receiving
3 the customer request for information.

1 39. The service of Claim 34, wherein the result output by the first data miner
2 includes at least one key representing at least one characteristic of at least one entity
3 in the data store.

1 40. The service of Claim 39, further comprising means for adding the key to
2 a table having therein plural entities, at least some entities having at least one attribute.

1 41. The service of Claim 39, wherein the value of the key is a binary value.

1 42. The service of Claim 39, wherein the value of the key is a non-binary value.

1 43. The service of Claim 39, wherein the key represents whether the
2 associated entity is pornography.

1 44. The service of Claim 39, wherein the key represents whether the
2 associated entity is a high quality entity.

1 45. The service of Claim 39, wherein the key indicates whether the associated
2 entity represents a corporation.

1 46. The service of Claim 39, wherein the key represents whether the
2 associated entity represents a person.

1 47. The service of Claim 39, wherein the key represents a geographical
2 characteristic of the associated entity.

1 48. The service of Claim 39, wherein the first miner outputs at least a first key
2 representing whether the associated entity is pornography, and second through fifth
3 miners operate on data in the data store to respectively generate second through fifth
4 keys respectively representing whether an associated entity is a high quality entity,
5 whether an associated entity represents a corporation, whether an associated entity
6 represents a person, and a geographical characteristic of an associated entity.

1 49. The service of Claim 39, wherein the entity represents a Web page.

1 50. The service of Claim 39, wherein the entity represents a hyperlink.

1 51. The service of Claim 39, wherein the entity represents at least one of: a
2 corporation, a demographic group, a geographic region.

1 52. The service of Claim 34, wherein the data miner includes rule means for
2 generating the result.

1 53. The service of Claim 52, further comprising means for generating at least
2 one index of the data store at least partially based on the result of the miner.

1 54. The method of Claim 1, wherein the output of the second miner is useful
2 for identifying at least one linking entity for expanding a scope of a litigation discovery
3 request.

KNOWLEDGE-BASED DATA MINING SYSTEM**ABSTRACT OF THE DISCLOSURE**

In a data mining system, data is gathered into a data store using, e.g., a Web crawler. The data is classified into entities. Data miners use rules to process the entities and append respective keys to the entities representing characteristics of the entities as derived from expert rules embodied in the miners. With these keys, characteristics of entities as defined by disparate expert authors of the data miners are identified for use in responding to complex data requests from customers.

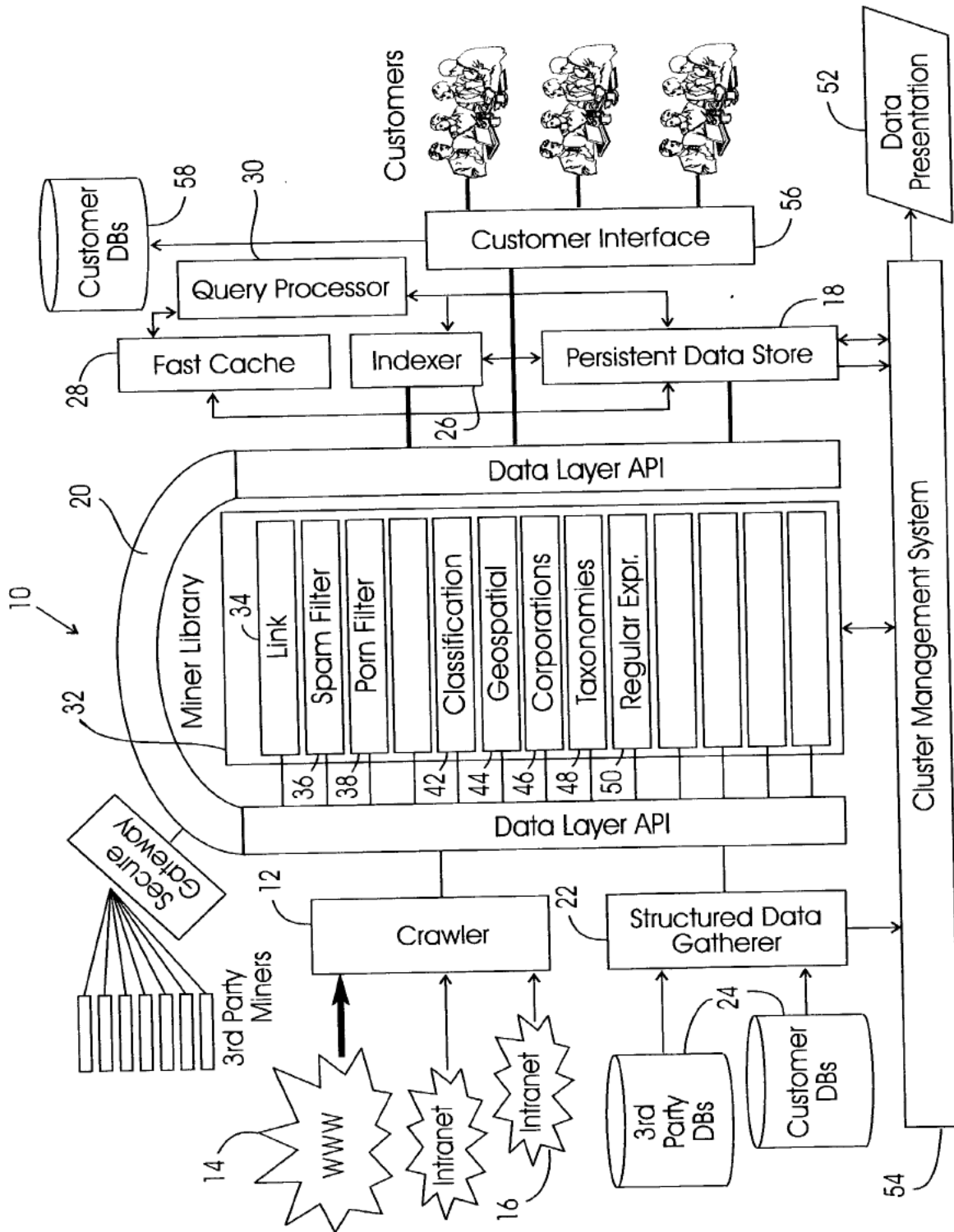
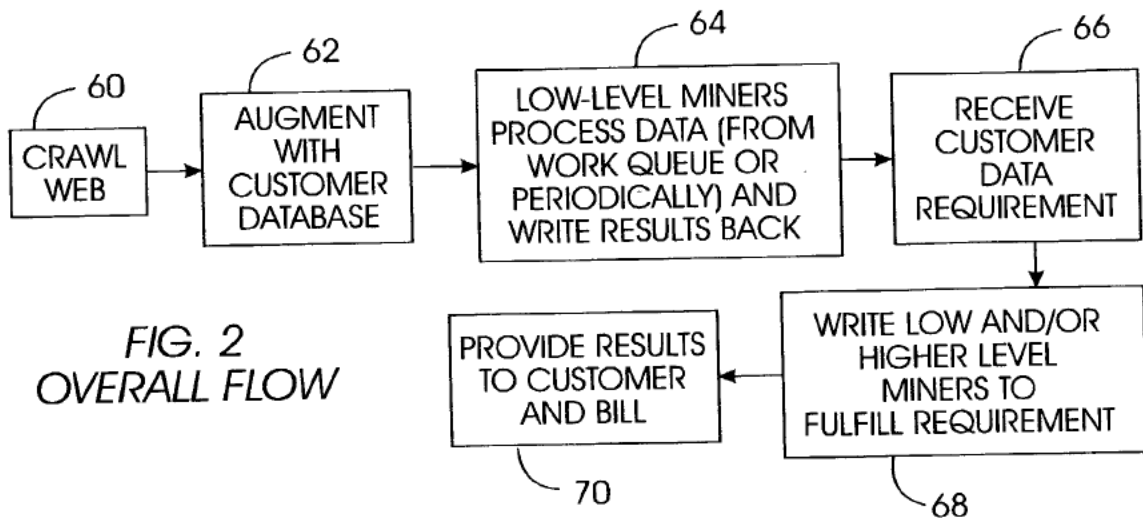


FIG. 1



HORIZONTAL TABLE

FIG. 3

76	78	80		
UEID ₁	Time Stamp	Key ₁	Key ₂	Key _n
UEID ₂	Time Stamp	Key ₃	Key ₄	Key _m
UEID _N	Time Stamp	Key ₅	Key ₆	Key _l

VERTICAL TABLE

FIG. 4

86	88	90	92	94
Key ₁	UEID ₁	Key Code	Key Value	Time Stamp
Key ₂	EID	Code	Value	Time
Key ₃	EID	Code	Value	Time

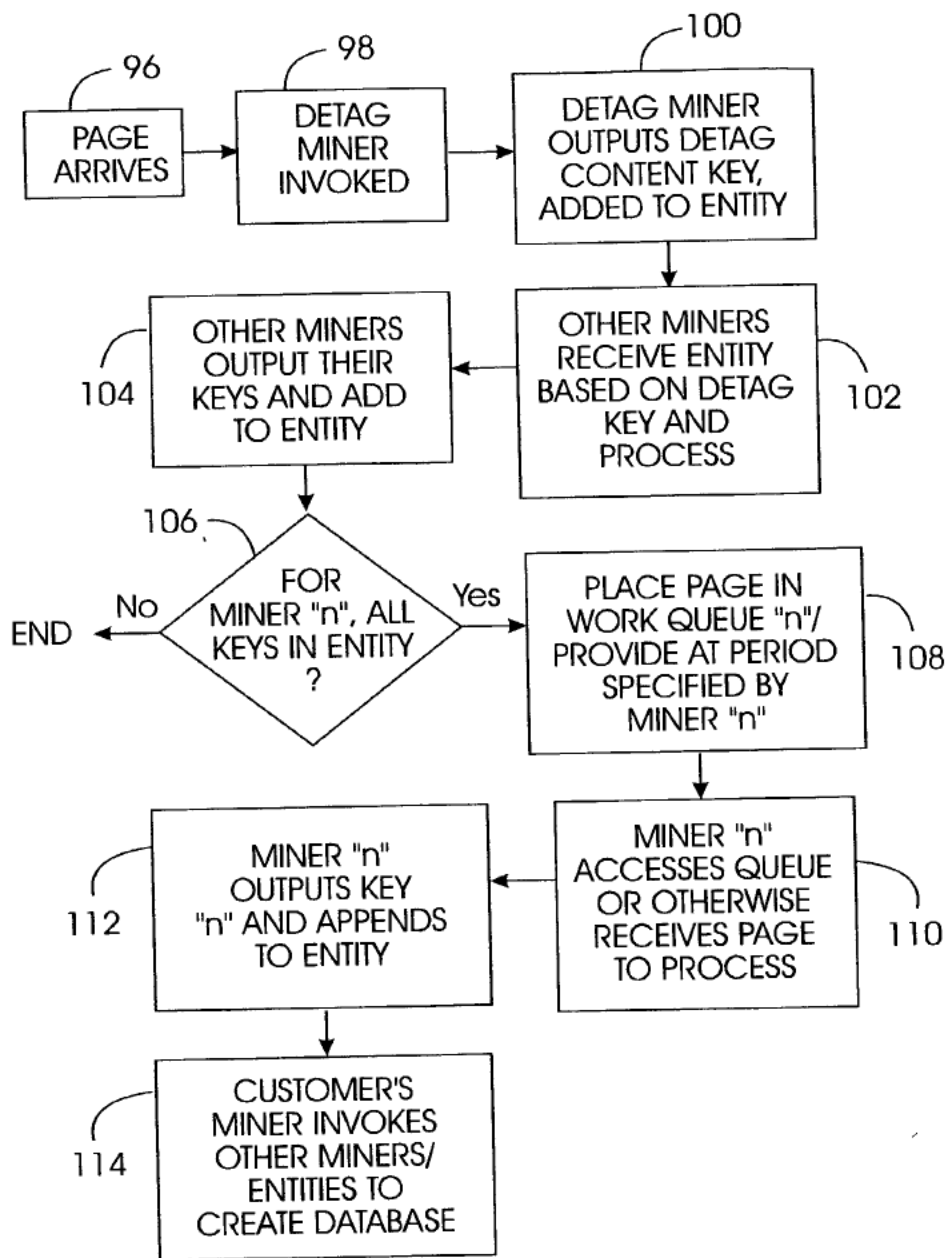


FIG. 5

Page 1 of 3

Docket No. ARC920020011US1

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

KNOWLEDGE-BASED DATA MINING SYSTEM

the specification of which is attached hereto unless the following box is checked:

was filed on _____
as United States Application Number or PCT International Application Number _____
and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR §1.56.

I hereby claim foreign priority benefits under 35 USC §119(a-d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s):

Priority Not Claimed

_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)
-------------------	--------------------	---------------------------------

I hereby claim the benefit under 35 USC §119(e) of any United States provisional application(s) listed below:

Provisional Application(s):

_____ (Application Number)	_____ (Filing Date)
-------------------------------	------------------------

I hereby claim the benefit under 35 USC §120 of any United States application(s), or §365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 USC §112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR §1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

_____ (Application Number)	_____ (Filing Date)	_____ (Status - patented, pending, abandoned)
-------------------------------	------------------------	--

Power of Attorney:

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Thomas R. Berthold	(#28,689)
Marc D. McSwain	(#44,929)
Khanh Q. Tran	(#41,352)
Alison D. Mortinger	(#39,306)
John L. Rogitz	(#33,549)

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

Address all telephone calls to:

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(619) 338-8075

Address all correspondence to:

John L. Rogitz
Rogitz & Associates
750 B Street, Suite 3120
San Diego, California 92101

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor: **MATTHEW DENESUK**

Inventor's signature:

Date: 4/23/2002

Residence:

1770 Hudson Drive
~~4400 The Woods Drive, #1801, San Jose, California 95136~~ ⁹⁵¹²⁴

Citizenship: **United States of America**

Post Office Address: Same

Full name of second inventor: **DANIEL FREDERICK GRUHL**

Inventor's signature:

Date: 4/23/2002

Residence:

675 Dorene Pl, San Jose CA 95120
~~392 Capitol Village Circle, San Jose, California 95136~~

Citizenship: **United States of America**

Post Office Address: Same

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

Full name of third inventor: **KEVIN SNOW MCCURLEY**

Inventor's signature:

Kevin S. McCurley

Date:

5/06/2002

Residence: **6721 Tannahill Drive, San Jose, California 95120**

Citizenship: **United States of America**

Post Office Address: **Same**

Full name of fourth inventor: **SRIDHAR RAJAGOPALAN**

Inventor's signature:

Sridhar Rajagopalan

Date:

5/06/2002

Residence: **1010 Foxchase Drive, San Jose, California 95128** *19206, Vineyard Lane, Saratoga, CA 95070*

Citizenship: **India**

Post Office Address: **Same**

Full name of fifth inventor: **ANDREW S. TOMKINS**

Inventor's signature:

Andrew S. Tomkins

Date:

5/1/2002

Residence: **3613 Copperfield Drive, #336, San Jose, California 95136**
737 Harry Rd, San Jose, CA 95120

Citizenship: **United States of America**

Post Office Address: **Same**

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

05/13/2002 JBALINAN 00000054 090441 10141686

01 FC:101	740.00 CH
02 FC:103	612.00 CH

PTO-1556
(5/87)

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 2001

Application or Docket Number

10/4/86

CLAIMS AS FILED - PART I

(Column 1) (Column 2)

TOTAL CLAIMS	64	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	64 minus 20 = *	34
INDEPENDENT CLAIMS	3 minus 3 = *	-
MULTIPLE DEPENDENT CLAIM PRESENT ☐		

SMALL ENTITY
TYPE ☐

OR OTHER THAN SMALL ENTITY

RATE	FEE
BASIC FEE	370.00
X\$ 9=	
X42=	
+140=	
TOTAL	

RATE	FEE
BASIC FEE	740.00
X\$18=	612
X84=	
+280=	
TOTAL	1352

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

(Column 1) (Column 2) (Column 3)

AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

SMALL ENTITY

OR OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE
X\$ 9=	
X42=	
+140=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$18=	
X84=	
+280=	
TOTAL ADDIT. FEE	

(Column 1) (Column 2) (Column 3)

AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

RATE	ADDITIONAL FEE
X\$ 9=	
X42=	
+140=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$18=	
X84=	
+280=	
TOTAL ADDIT. FEE	

(Column 1) (Column 2) (Column 3)

AMENDMENT C		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

RATE	ADDITIONAL FEE
X\$ 9=	
X42=	
+140=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$18=	
X84=	
+280=	
TOTAL ADDIT. 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 number found in the appropriate box in column 1.

BEST AVAILABLE COPY

CLAIMS ONLY

SERIAL NO.

10141686

FILING DATE

APPLICANT(S)

CLAIMS

	AS FILED		AFTER 1st AMENDMENT		AFTER 2nd AMENDMENT			★		★		★	
	IND.	DEP.	IND.	DEP.	IND.	DEP.		IND.	DEP.	IND.	DEP.	IND.	DEP.
1	/						51		/				
2		/					52		/				
3		/					53		/				
4		/					54		/				
5		/					55						
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46		/					96						
47		/					97						
48		/					98						
49		/					99						
50		/					100						
TOTAL IND.		↓		↓		↓	TOTAL IND.	3	↓		↓		↓
TOTAL DEP.		←		←		←	TOTAL DEP.	57	←		←		←
TOTAL CLAIMS							TOTAL CLAIMS	54					

* MAY BE USED FOR ADDITIONAL CLAIMS OR ADMENDMENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Applicant: DENESUK

Title: KNOWLEDGE-BASED DATA MINING
SYSTEM

Filing Date: Herewith

) Art Unit: Unk.

) Examiner: Unk.

) Docket No.: ARC920020011US1

) May 7, 2002

) 750 "B" Street, Suite 3120
San Diego, CA 92101

11046 U.S. PTO
10/14/686
05/08/02

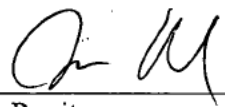
INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents
Washington, DC 20231

Dear Sir:

Pursuant to Sections 1.97, 1.98, and 1.99 of the Rules of Practice in patent cases, enclosed is the reference as cited on the "List of References Cited by Applicant," Form PTO-1449, submitted herewith.

Respectfully submitted,



John L. Rogitz
Attorney of Record
Registration No. 33,549
750 "B" Street, Suite 3120
San Diego, CA 92101
Telephone: (619) 338-8075

JLR/jg

Form PTO-1449 (modified) LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT(S)' INFORMATION DISCLOSURE STATEMENT <i>(Use several sheets if necessary)</i>	Attorney Docket No. ARC920020011US1	Serial N .
	Applicant(s): DENESUK et al.	
	Filing Date: Herewith	Group Art Unit:

U.S. PATENT DOCUMENTS

Examiner Initials	Document No.	Date	Name	Class	Subclass	Filing Date

11046 U.S. PTO
10/141686
05/06/82

FOREIGN PATENT DOCUMENTS

Examiner Initials	Document No.	Date	Country	Class	Subclass	Translation Yes No

PUBLICATIONS / OTHER ART

Examiner Initials	Citation
	PUBLICATION: "USING COLLABORATIVE FILTERING TO WEAVE AN INFORMATION TAPESTRY". Goldberg et al. Communications of the ACM, Vol. 35, No. 12, pp. 61-70. December, 1992.

Examiner

Date Considered

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