

REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application is a Continuation-in-Part of U.S. Application No. 18/083,727 filed on December 19, 2022, and entitled “Real Time Correction of Accent in Speech Audio Signals,” which in turn claims priority of U.S. Provisional Patent Application No. 63/297,901 filed on January 10, 2022, entitled “Real Time Correction of Accent in Speech Audio Signals.” The subject matter of the aforementioned applications is incorporated herein by reference in its entirety for all purposes.

TECHNICAL FIELD

[0002] This disclosure generally relates to audio processing. More particularly, this disclosure relates to systems and methods for real-time correction of accent in input audio signals.

BACKGROUND

[0003] Audio communications, such as audio chats, audio and video calls, and audio and video meetings are very popular in various applications. However, audio communications can be complicated by the fact that speakers possess strong accents that are difficult to understand for other participants. Existing solutions for correcting accents in audio signals are not very effective in real-time communications.

SUMMARY

[0004] This summary is provided to introduce a selection of concepts in a simplified form that are further described in the Detailed Description below. This summary is not intended to identify key features or essential features of the claimed subject matter, nor is it intended to be used as an aid in determining the scope of the claimed subject matter.

[0005] According to one example embodiment of the present disclosure, a method for real-time correction of an accent in an input audio signal is provided. The method can be implemented by a computing system. The method may include extracting acoustic features from a chunk of a stream of chunks of the input audio signal by an acoustic features extraction module of a computational graph. The method may include extracting linguistic features with a reduced accent from the chunk by a linguistic features extraction module of the computational

graph. The method may include synthesizing, by a synthesis module of the computational graph, a spectrum representation based on the acoustic features, the linguistic features, and a speaker embedding for a human speaker. The method may include generating, by a vocoder of the computational graph and based on the spectrum representation, an output chunk of an output audio signal. Each node (module) in the computational graph can be associated with its own set of inputs (input features) and can compute a set of outputs (output features) depending on the inputs. The spectrum representation can be an example of an input feature or an output feature.

[0006] The spectrum representation may include a melspectrogram with the reduced accent. The acoustic features may include one or more of the following: a pitch of the input audio signal, a standard deviation of the pitch of the input audio signal, a mean of the pitch of the input audio signal, an energy of the input audio signal, a noise floor of the input audio signal, Linear Prediction Cepstral Coefficient (LPCC) of the input audio signal, Mel Frequency Cepstral Coefficient (MFCC) of the input audio signal, and Bark frequency Cepstral coefficient (BFCC) of the input audio signal.

[0007] The input audio signal is digitized with a first sample rate and the output audio signal is digitized with a second sample rate. The second sample rate can be different from the first sample rate. Input data of the first module of the computational graph may have a first sample rate and output data of a second module preceding the first module in the computational graph may have a second sample rate different from the first sample rate. The method may include resampling the output data from the second sample rate to the first sample rate and providing the resampled output data and at least one characteristic of the resampled output data to the first module as the input data.

[0008] The computing system includes at least two processing units, and at least two modules from the computational graph are processed in parallel using the at least two processing units. The method may include providing, as an input to at least one module in the computational graph, a time-shift parameter indicating a difference in timestamps of the chunk of a stream of chunks of the input audio signal and one of the following: input data or output data of the at least one module. The method may include assigning a further time-shift parameter to output data of at least one module. The further time-shift parameter may include the time-shift parameter and internal delay of processing the input data by at least one module. The method may include providing the further time-shift parameter and the output data as a further input to

a further module succeeding the at least one module in the computational graph. The acoustic features are assigned a lower time-shift parameter than the linguistic features.

[0009] According to another embodiment, a system for real-time correction of an accent in an input audio signal is provided. The system may include a computational graph including an acoustic features extraction module, a linguistic features extraction module, a synthesis module, and a vocoder. The acoustic features extraction module can be configured to extract acoustic features from a chunk of a stream of chunks of the input audio signal. The linguistic features extraction module can be configured to extract, from the chunk, linguistic features with a reduced accent. The synthesis module can be configured to synthesize a spectrum representation based on the acoustic features, the linguistic features, and a speaker embedding for a human speaker. The vocoder can be configured to generate, based on the spectrum representation, an output chunk of an output audio signal.

[0010] According to yet another aspect of the disclosure, there is provided a non-transitory processor-readable medium, which stores processor-readable instructions. When the processor-readable instructions are executed by a processor, they cause the processor to implement the above-mentioned method for real-time correction of an accent in an input audio signal.

[0011] Additional objects, advantages, and novel features will be set forth in part in the detailed description section of this disclosure, which follows, and in part will become apparent to those skilled in the art upon examination of this specification and the accompanying drawings or may be learned by production or operation of the example embodiments. The objects and advantages of the concepts may be realized and attained by means of the methodologies, instrumentalities, and combinations particularly pointed out in the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] Embodiments are illustrated by way of example and not limitation in the figures of the accompanying drawings, in which like references indicate similar elements.

[0013] FIG. 1 shows an example environment, where a method for real-time correction of accent in input audio signals can be practiced.

[0014] FIG. 2 is a schematic showing features that can be extracted from an input audio signal, according to some example embodiments of the present disclosure.

[0015] FIG. 3 is a block diagram showing a pipeline for real-time correction of an accent in input audio signals, according to an example embodiment.

[0016] FIG. 4 is a schematic showing details of dividing an input audio signal into chunks for forming input data to modules of the pipeline, according to an example embodiment.

[0017] FIG. 5 is a schematic showing details of processing input frames during a training stage of submodules and modules of the pipeline, according to an example embodiment.

[0018] FIG. 6 is a schematic showing details of summation of a context in an example module 600, according to an example embodiment.

[0019] FIG. 7 shows a part of an example neural network trained to generate linguistic accent-agnostic features, according to an example embodiment.

[0020] FIG. 8 is a block diagram showing blocks of a synthesis module, according to an example embodiment.

[0021] FIG. 9 is a schematic showing details of streaming of an input audio signal, according to some example embodiment.

[0022] FIG. 10 is a block diagram showing a digital signal processing module for use with a system for real-time correction of accent in input audio signals, according to some example embodiments.

[0023] FIG. 11 is a flow chart showing a method for real-time correction of accent in input audio signals, according to some example embodiments.

[0024] FIG. 12 is a schematic showing details of processing a stream of features by modules of pipeline, according to some example embodiments.

[0025] FIG. 13 illustrates a method for real-time correction of accent in input audio signals in accordance with some embodiments.

[0026] FIG. 14 is a high-level block diagram illustrating an example computer system, within which a set of instructions for causing the machine to perform any one or more of the methodologies discussed herein can be executed.

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DETAILED DESCRIPTION

[0027] The following detailed description of embodiments includes references to the accompanying drawings, which form a part of the detailed description. Approaches described in this section are not prior art to the claims and are not admitted to be prior art by inclusion in this section. The drawings show illustrations in accordance with example embodiments. These example embodiments, which are also referred to herein as “examples,” are described in enough detail to enable those skilled in the art to practice the present subject matter. The embodiments can be combined, other embodiments can be utilized, or structural, logical, and operational changes can be made without departing from the scope of what is claimed. The following detailed description is, therefore, not to be taken in a limiting sense, and the scope is defined by the appended claims and their equivalents.

[0028] For purposes of this patent document, the terms “or” and “and” shall mean “and/or” unless stated otherwise or clearly intended otherwise by the context of their use. The term “a” shall mean “one or more” unless stated otherwise or where the use of “one or more” is clearly inappropriate. The terms “comprise,” “comprising,” “include,” and “including” are interchangeable and not intended to be limiting. For example, the term “including” shall be interpreted to mean “including, but not limited to.” The terms “can” and “may” shall mean “possibly be, but not limited to be.”

[0029] This disclosure relates to methods and systems for real-time correction of accent in input audio signals. Some embodiments of the present disclosure may be implemented in audio and video conversations to remove an accent in an input audio signal captured from of a speaker uttering speech in a language that is not native to the speaker or a dialect of the same language that is different from the dialect spoken by other participants. Specifically, the input audio signal can be analyzed in real time in chunks to extract acoustic features and linguistic features. The acoustic features and linguistic features can then be used to synthesize a spectrum representation lacking the accent of the speaker. The spectrum representation can be used by a vocoder to generate an output audio signal lacking the accent.

[0030] The method for real-time correction could be represented as a computational graph (pipeline) including computational blocks (modules or nodes). Each of the blocks can be implemented via neural models, signal transforms, and the like. Transformation of input signal to output signal may involve computing every block in such computational graph. Computation of blocks may not be limited to a single processor. In various embodiments,

different parts of a computational graph can be performed on Graphics Processing Units (GPUs), Neural Processing Units (NPU), Field Programmable Gate Arrays (FPGAs), and central processing units (CPUs). Data flowing in a computational graph can be transferred from memory of processors of one type to memory of processors of other types using data transportation means when required for computing. Computing of the computational graph may or may not be parallelized using multi-threaded environments or frameworks.

[0031] Order of the computing nodes can be based on dependency of inputs of each node from preceding nodes. If the output of the first node in the computational graph is used as input of the second node in the computing graph, then such nodes are referred to as adjacent nodes, the first node is referred to as a preceding node and the second node is referred to as a succeeding node. A node of the computational graph can start computing only when all required input features have been already computed by preceding nodes. The computation for a set of nodes can be performed in parallel if inputs of any node from a set do not depend on outputs of any other node from this set.

[0032] Input data of the first module of the computational graph may require input with defined sample rate (also referred to as a frame rate, which is a number of frames per second) and corresponding output data of the second module preceding the first module in the computational graph may have a second sample rate different from the first sample rate. Accordingly, the output data can be resampled to the defined sample rate and the resampled output data can be provided to the first module as input data.

[0033] In contrast to the existing solutions, embodiments of the present disclosure allow to reduce the delay between recording a chunk of the speech acoustic signal and outputting the corresponding chunk of the output audio signal to 40-300 milliseconds.

[0034] An example environment 100 is where a method for real-time correction of accent in input audio signals can be practiced. It should be noted, however, that the environment 100 is just one example and is a simplified embodiment provided for illustrative purposes, and reasonable deviations of this embodiment are possible as will be evident to those skilled in the art.

[0035] As shown in FIG. 1, environment 100 may include a user 102, a user 104, a computing device 106, a computing device 110, a network 108, and a cloud-based computing resource 112 (also referred to as a computing cloud 112).

[0036] The computing device 106 and computing device 110 each may include a sound sensor, memory, processor, communication unit, and output device. The memory may be configured to store processor-readable (machine-readable) instructions or codes, which when performed by the processor, cause the computing device 106 (or computing device 110) to perform at least some steps of methods for real-time correction of accent in input audio signals as described herein. The processor may perform floating point operations, complex operations, and other operations, including performing speech recognition and analysis based on ambient acoustic signals captured by sound sensor(s). The processors may include general purpose processors, video processors, audio processing systems, CPUs, GPUs, and so forth. The sound sensor(s) can include one or more microphones. The sound sensor(s) can be spaced a distance apart to allow the processor to perform a noise and/or echo reduction in received acoustic signals. The output device(s) may comprise one or more speaker(s), an earpiece of a headset, or a handset.

[0037] In various embodiments, the computing device 106 and computing device 110 can be configured to communicate with a network 108 such as the Internet, wide area network (WAN), local area network (LAN), cellular network, and so forth, to receive and send audio data.

[0038] The computing device 106 and computing device 110 can refer to a mobile device such as a mobile phone, smartphone, or tablet computer, a personal computer, laptop computer, netbook, set top box, television device, multimedia device, personal digital assistant, game console, entertainment system, infotainment system, vehicle computer, or any other computing device. The computing device 106 can be communicatively connected to the computing device 110 and the computing cloud 112 via network 108.

[0039] The network 108 can include any wired, wireless, or optical networks including, for example, the Internet, intranet, LAN, Personal Area Network (PAN), WAN, Virtual Private Network (VPN), cellular phone networks (e.g., Global System for Mobile (GSM) communications network, packet switching communications network, circuit switching communications network), BluetoothTM radio, Ethernet network, an IEEE 802.11-based radio frequency network, a Frame Relay network, Internet Protocol (IP) communications network, or any other data communication network utilizing physical layers, link layer capability, or network layer to carry data packets, or any combinations of the above-listed data networks. In some embodiments, network 108 may include a corporate network, data center network, service provider network, mobile operator network, or any combinations thereof.

[0040] Computing cloud 112 can be shared by multiple users and be dynamically reallocated based on demand. Computing cloud 112 can include one or more server farms and clusters including a collection of computer servers that can be co-located with network switches or routers.

[0041] According to one example embodiment, user 102 may communicate with user 104 through a voice call using a messenger or send voice messages via the messenger. The voice of user 102 can be captured by the sound sensor of the computing device 106 to generate an input audio signal. The user 102 may not be a native speaker of the language the user 102 speaks, so the input audio signal may include an accent of the user 102. The input audio signal can be further modified to remove or reduce the accent of the user 102 in the input audio signal.

[0042] In one embodiment, the modification of the input audio signal can be carried out by a processor of computing device 106. The modified input audio signal can be sent, via the communication unit of the computing device 106, to the computing device 110. The computing device 110 may play back the modified input audio signal via output device(s). Thus, user 104 may listen to the modified input audio signal instead of the speech of the user 102.

[0043] In other embodiments, the input audio signal can be sent to the computing cloud 112. In some embodiments, the input audio signal can be sent to the computing cloud 112 using voice over internet protocol (VoIP). Computing cloud 112 can modify the input audio signal to remove or correct the accent of the user 102 from the input audio signal. Computing cloud 112 can send the modified input audio signal to the computing device 110.

[0044] FIG. 2 is a schematic showing features 216 that can be extracted from an input audio signal 202, according to some example embodiments of the present disclosure. The input audio signal 202 may include waveforms 214. The features 216 can be calculated per each time frame x . The features 216 may include acoustic features and linguistic features 210. The acoustic features may include pitch 206 (or main frequency (F0)), energy 208 (signal amplitude), and voice activity detection (VAD) 212. VAD 212 is a flag indicating the presence or absence of voice in the time frame. In some embodiments, the acoustic features may also include a standard deviation of the pitch of the input audio signal, a mean of the pitch of the input audio signal, an energy of the input audio signal, a mean of the energy of the input audio signal, a noise floor of the input audio signal, a standard deviation of the energy of the input audio signal, and the like. In certain embodiments, the acoustic features may include LPCC of

the input audio signal, MFCC of the input audio signal, and BFCC of the input audio signal, and custom linear transform of Short-time Fourier transform (STFT) values of audio signal.

[0045] Each of the features 216 is aligned with the others in time. Values of each feature are equidistant in time with respect to the values of the same feature obtained from the neighboring time frames. Accordingly, each of the features 216 is obtained from a chunk of input audio signal 202 corresponding to an equal time period.

[0046] The spectrum representation, for example melspectrogram 210, can be generated based on the acoustic features and linguistic features 210 as described herein. In other embodiments, spectrum representation may include LPCCs and BFCCs.

[0047] FIG. 3 is a block diagram showing a pipeline 300 for real-time correction of an accent in input audio signals, according to an example embodiment. The pipeline 300 (also referred to as a computational graph) may include an acoustic features extraction module 302, a linguistic features extraction module 304, a synthesis module 800, and a vocoder 306.

[0048] The acoustic features extraction module 302 may extract, from a time frame of the input audio signal 202, the acoustic features including pitch 206 (F0), energy 208, and VAD 212. These acoustic features can be obtained by algorithmic methods for signal processing or neural networks.

[0049] The linguistic features extraction module 304 may extract, from a time frame of the input audio signal 202, linguistic features 210. In some embodiments, linguistic features 210 may include hidden features of an Automatic Speech Recognition (ASR) neural network with additional custom training and transformations or phonemes belonging to a phoneme set for a predetermined language. For example, the phoneme set may include ARPAbet phoneme set for English or classes (called pseudo-labels) of some clusterization algorithm over linguistic acoustic features of English speech data, like mel-spectrogram or hidden features of the ASR neural network. The phonemes can be obtained by a neural network trained to recognize and classify phonemes. In certain embodiments, the linguistic features 210 can be represented as Phonetic PosteriorGrams (PPGs). PPG can be defined as a distribution of the posterior probabilities of each phonetic class for each specific time frame of the input audio signal 202. Even though embodiments of the present disclosure are described as utilizing PPGs, the present technology can be practiced with any linguistic features. For example, linguistic features 210 may include bottleneck outputs (bottleneck features) of an ASR neural network. The bottleneck outputs can be calculated from previous internal layer(s) of the ASR neural network.

Typically, the bottleneck features of the ASR neural network can be represented as multidimensional vectors, for example 256 values per frame.

[0050] The acoustic features and linguistic features can be provided to the synthesis module 800. The synthesis module 800 may generate a spectrum representation, for example melspectrogram 204, corresponding to speech of the user 102 with removed or reduced accent. The spectrum representation (melspectrogram 204) can be provided to the vocoder 306. The vocoder 306 may generate output audio signal 308.

[0051] In some embodiments, the computational graph can be implemented on a single CPU-based computational system. In other embodiments, the different nodes of a computational graph (pipeline 300) can be implemented using computing systems including different computational nodes, such as GPU-based nodes, CPU-based nodes, NPU, and FPGAs.

[0052] In one example embodiment, acoustic features extraction module 302, linguistic features extraction module 304, and synthesis module 800 can be implemented on GPU-based computational nodes. Then spectrum representation (melspectrogram 204) can be transferred on a CPU-based computational node that implements vocoder 306. In these embodiments, extraction of acoustic features and linguistic features can be parallelized. Computing of some acoustic feature extraction nodes and linguistic feature extraction nodes may be parallelized because inputs of the acoustic feature extraction nodes and the linguistic feature extraction nodes do not depend on output features of each other.

[0053] In another example embodiment, acoustic features extraction module 302 and linguistic features extraction module 304 can be implemented on CPU-based computational nodes. Then acoustic features and linguistic features can be transferred to GPU-based computational nodes that implement synthesis module 800 and vocoder 306. In these embodiments, extraction of acoustic features and linguistic features can be parallelized.

[0054] In yet another embodiment, modules 302, 304, 800, and 306 each can be implemented on CPU-based computational nodes. In these embodiments, extraction of acoustic features and linguistic features can be parallelized.

[0055] It should be noted that in some embodiments, modules 302, 304, 800 can be implemented as neural networks. In these embodiments, in addition to performing parallel computation of acoustic features and linguistic features, computation of internal blocks of the neural networks can be also viewed as different computational nodes and performed in parallel on multiple processing units if the structures of the neural networks allow to do so.

[0056] In general, GPU-based computational nodes can be used if modules 302, 304, 800, and 306 are neural network-based modules. If any of the modules 302, 304, 800, and 306 are not implemented as a neural network, such a module can be implemented on CPU-based computational nodes. However, if vocoder 306 is a Linear predictive coding network (LPCNet) vocoder, the vocoder 306 can be implemented on a CPU-based computational node.

[0057] FIG. 4 is a schematic 400 showing details of dividing an input audio signal 202 into chunks for forming input data to modules of the pipeline 300. The input audio signal 202 can be provided to the modules (for example, acoustic features extraction module 302) as a stream 404 of chunks. Each chunk may include a predetermined number of frames. Each of the frames is a portion of the input audio signal 202 of a predetermined time interval size. In some embodiments, the length of each of the frame can be, for example, 11.6 milliseconds (ms).

[0058] An input to module 302 may include a chunk 408 of frames concatenated with a context 402. The context 402 may include a pre-determined number of frames of the input audio signal 202 preceding the chunk 408. Context 402 can be stored in a cache of module 302 and continuously updated. Thus, at each state of real time, input of the modules can include the chunk 408 ended at the previous state of real time and the context 402 corresponding to the chunk.

[0059] The output of module 302 is stream 404. The stream 404 may include chunks of one of acoustic features (pitch 206 (F0), energy 208, or VAD 212). Output chunk 410 can be formed by cutting, from an output stream 406, a chunk that ends at an effective state of real time in module 302. The context 402 can be extended by chunk 408. The first chunk in the context 402 can be removed. Thus, the modified context 402 can be used for processing the next chunk from the stream 404. The output chunk 410 can be provided to the synthesis module 800 (shown in FIG. 3). Similarly, module 304 (shown in FIG. 3) may produce a stream of chunks of linguistic features. The chunks of linguistic features can also be provided to the synthesis module 800.

[0060] Overall, input of the synthesis module 800 includes a stream of chunks of linguistic features 225 (PPGs), a stream of chunks of values of pitch 206 (F0), a stream of chunks of values of energy 208, and a stream of chunks of values of VAD 212, all the streams being aligned with each other. The output of the synthesis module 800 module and, correspondingly, the input of the vocoder 306, includes a stream of chunks of melspectrogram 204. Similar to module 302, each of the modules 304, 800, and 306 may have a cache to store a context

including a predetermined number of previous frames of the corresponding features. The above architecture of streaming chunks to every one of modules 302, 304, 800, and 306 can be applied recursively to internal submodules of these modules, such as neural network blocks and layers.

[0061] In further embodiments, the context can be also cached for submodules of the modules 302, 304, 800, and 306. For example, acoustic features extraction module 302 may include one or more of the following submodules: 1D convolution layer (Conv1d), attention layer, and variance predictors. Each of the submodules may include cache for storing the context of output of corresponding preceding submodule in the acoustic features extraction module 302. The preceding submodule may output a stream of chunks of internal features corresponding to stream 404. The input to the next submodule in module 302 may include the last output chunk produced by the preceding submodule and the context including a predetermined number of previous frames of chunks produced by the preceding submodule.

[0062] Caching context for inner submodules of modules 302, 304, 800, and 306 (outer modules) may allow to achieve same output quality for modules 302, 304, 800, and 306 between training stage and streaming (inference) stage because a future context of an outer module originates from future contexts of inner submodules. Every layer in sequential part of a neural network that implements one of the modules 302, 304, 800, and 306 can be part of the future context. The parts of the future context can be summed up to receive a total future context of the outer module. The total future context of the outer module can be split into the outer part (regulated with cache of the outer module) and inner part (regulated with inner submodules' caches). In some embodiments, only inner future context can be used in streaming. In other embodiments, partially inner future context and partially outer future context can be used in streaming.

[0063] FIG. 5 is a schematic 500 showing details of processing input frames during the training stage of submodules and modules of the pipeline 300, according to an example embodiment. FIG. 5 shows input frames and output frames for a minimal example of a neural network layer, which produces output shifted on the time axis parametrized by future context (also referred to as a shift). For example, the neural network layer may include conv1d, attention layer, conformer, and other layers. During training, the output frames x' can be shifted for calculation of Loss sensitive to time location, which can teach the model (layer) to produce shifted output by the parameter of the future context. On inference stage (streaming),

the input frames $\hat{x}$ can be concatenated with previous context, divided in chunks, and processed as described in FIG. 4.

[0064] FIG. 6 is a schematic showing details of summation of a context in an example module 600, according to an example embodiment. The module 600 may include parallel blocks, Conv1D 602 and Shift 604. The Conv1D 602 may use input frames 1, 2, 3 as context for input frames 4 and 5. To obtain the total future context for module 600, the input frames 1, 2, 3, 4, 5 can be shifted by shift 604 by 2 frames and summed with context output from the Conv1D 602 in block 606.

[0065] In some embodiments, the future context can be determined as a maximum of sums of context in any sequential path within the module, submodule, or neural network. For example, the residual block module has a residual connection of a convolution layer with two sequential operations, where the first operation is convolution with future context x , and the second operation is residual summation of inputs to convolution layer to output. There are two sequential paths from inputs to outputs in such a module, the first path: inputs→conv→add→output, and the second path: inputs→add→output. If the sequential path with the maximum sum of future contexts is the first path, then the total future context equals x . In these embodiments, correctness (i.e., requirement of producing the same result as achieved for a trained system) for a computational graph is proved if the future contexts of any sequential path of the computational graph, where edges oriented from inputs to outputs, are equal to the same value.

Technical Details

[0066] 1) In some embodiments, the input audio signal 202 can include a continuous stream of 16-bit samples with a frequency of 22050 kHz. The input audio signal 202 can be split into overlapping windows with a step of 256 samples (~11.6 ms). Accordingly, one frame corresponds to 256 samples.

[0067] The acoustic features and linguistic features can be extracted and calculated such that the centers of the windows that correspond to each feature coincide. Thus, the centers can point to the same moment in time to satisfy the condition of alignment of the features. Accordingly, when the synthesis module 800 processes the input, the number of frames from each feature is the same. The number of frames in the output melspectrogram 204 may also coincide with the number of frames from each feature. Consequently, the number of samples

of the input audio signal 202 (input signal) can be equal to the number of samples of output audio signal 308.

[0068] 2) FIG. 7 shows a part of an example neural network 700 trained to generate accent-agnostic PPGs. The neural network 700 may include N Conformer blocks 704 and K Conformer blocks 702. The *Conformer* is a convolution-augmented transformer for speech recognition. Each of the *Conformer* blocks can be implemented with restrictions on attention and the convolutional layer on visible future frames and previous frames. A neural network 700 trained to generate PPGs may also include a linear head for predicting phonemes.

[0069] The neural network 700 can be trained using an accent discriminator 706 and supervised information for accent. During training, an additional feed-forward network (FFN) can be used between transformer blocks of neural network 700. Output features from the FFN and supervised label on accent can be utilized for additional accent reduction loss L. Training with the additional accent reduction loss may reduce leak of accent through the recognition model. In example of FIG. 7, output of the Nth Conformer block 704 can be utilized to produce additional features by a simple FFN (for example, linear-Rectified Linear Unit (ReLU)-linear). These features can be utilized for accent reduction loss based on data labels indicating which accent is used on every utterance. Use of the accent reduction loss during training may help to produce accent-agnostic features. “Cross-entropy classification loss with reversal gradients module” for the accent reduction loss.

[0070] During inference, an output (target) accent can be selected from accents available on a training stage. During the training stage, datasets of different voices and accents can be used. Any of the datasets can be validated for appropriate sound quality and then used for output target voice and accent.

[0071] 3) Extraction of acoustic features (pitch 206 (F0), energy 208, or VAD 212, mean pitch, standard deviation of pitch, and so forth) can be performed by algorithmic methods using sound processing tools or by trained neural networks. The following algorithmic methods and utilities may be applied:

[0072] - Energy 208: STFT followed by a summation over all frequency bins and applying a logarithm to the result of the summation.

[0073] - Pitch 206 (F0) and VAD 212: values of F0 and voiced/unvoiced intervals can be obtained using the pyWORLD script. pyWORLD is a free software for high-quality speech analysis, manipulation, and synthesis. The pyWORLD can estimate fundamental frequency

(F0), aperiodicity, and spectral envelope. The values of F0 can be interpolated to unvoiced intervals. Then, the logarithm can be applied to resulting F0.

[0074] - Energy 208 and Pitch 206 (F0) can also be normalized globally using an average variance of corresponding values obtained from voice signals recorded from multiple speakers.

[0075] FIG. 8 is a block diagram showing blocks of the synthesis module 800, according to an example embodiment. The synthesis module 800 may include an encoder 802 and decoder 804. In some embodiments, encoder 802 and decoder 804 can be implemented as neural networks. Specifically, both encoder 802 and decoder 804 can be based on lightweight convolution blocks. A convolutional layer (Conv1d-Groupnorm-GELU) acting as relative positional embedding can be applied to input of the encoder 802. In some embodiments, relative positional embedding is added to the input inside the encoder 802. A further convolutional layer (Conv1d-Groupnorm-GELU) acting as further relative positional embedding can be applied to input of the decoder 804. In some embodiments, the further relative positional embedding is added to the input of the decoder 804.

[0076] The input of the encoder 802 are linguistic features 210. The output of the encoder 802 has hidden features 808. The speaker embedding 806 of a target speaker and embeddings of the discretized values of energy 208 and pitch 206 (f0) are further added to the output of the encoder 802 to form input for the decoder 804. If VAD 212 = False, a separate embedding is used instead of embedding of pitch 206 (F0). Speaker embedding 806 can be a calculated feature in the form of a dense multi-dimensional vector. Speaker embeddings 806 may include necessary information on target speakers' voice style not related to the accent of the target speaker.

[0077] In various embodiments, speaker embedding 806 can be trained fixed, pre-trained fixed, or extracted via a pre-trained model from input audio signal 202 in real-time. For example, the speaker embedding 806 can be trained or extracted using pre-trained algorithms in such a way that the voice acoustic features corresponding to the speaker embedding 806 match voice acoustic features of the target speaker. In these embodiments, the speaker embedding 806 can be pretrained based on audio data including recorded speech of the target speaker. User 102 may be provided with an option to select speaker embedding 806 from a list of pretrained speaker embeddings corresponding to different speakers.

[0078] In other embodiments, the voice speaker embedding 806 can be generated in real-time based on input audio signal 202 being recorded from the voice of the user 102. In these

embodiments, a caching scheme similar to the caching scheme described in FIG. 4 can be used to extract the speaker embedding 806 from input audio signal 202 in real-time. The speaker embedding 806 can be used later to produce output audio signal 308 having voice acoustic features of the user 102.

[0079] In yet other embodiments, the speaker embedding 806 can be pre-generated based on previously recorded speech signals of the user 102 and stored in memory of the computing device 106 or computing cloud 112. In these embodiments, the speaker embedding 806 can be retrieved from the memory computing device 106 or computing cloud 112 to avoid recomputing the speaker embedding 806 in real-time.

[0080] The output of decoder 804 is melspectrogram 210. The values of VAD 212, Energy 208, and pitch 206 can be the same as acoustic features extracted by acoustic features extraction module 302 (shown in FIG. 3) or predicted by separate modules of the synthesis module 800. All blocks of encoder 802 and decoder 804, as well as predictors and the relative positional encoding layer, can be implemented with a limited future context.

[0081] The melspectrogram 210 is provided to vocoder 306. In some embodiments, the vocoder 306 can correspond to the HiFi-GAN v2 or LPCNet vocoder without changes. The vocoder parameters may correspond to the synthesis of the audio signal for the frames of the melspectrogram.

[0082] In some embodiments, synthesis module 800 may be configured to use acoustic features and linguistic features and output different features than those described in FIG. 8. For example, features used by synthesis module 800 can include spectrogram, melspectrogram, MFCC, BFCC, energy, pitch F0, mean pitch F0, standard deviation of pitch F0, Voice Activity Detection, noise floor, and other features. Accordingly, synthesis module 800 may have a different neural block structure and different structures of encoder and decoder from those described in FIG. 8. In various embodiments, neural blocks can be CNN blocks, transformer blocks, conformer blocks, light-convolution blocks, normalizing flow invertible blocks with condition, diffusion blocks with condition, and others. Encoder and decoder structure may have different positional encoding, number of blocks, block types and their combination, skip connections, up-sampling and down-sampling blocks, and so forth.

[0083] All variations are subject to a synthesis model where the main goal is to synthesize acoustic features for vocoding from acoustic features, linguistic features, style features, or other kind of features.

Data

[0084] - **For PPG.** Medium-quality voice data of various accents with the presence of texts are available in datasets of LibriSpeech and CommonVoice. The texts can be normalized and processed to obtain phoneme sequences according to ARPAbet phoneme set. Next, the procedure of alignment (align) of phonemes in time can be performed using the Montreal-Forced-Aligner utility. The image of texts can be processed by grapheme-to-phoneme (g2p) to obtain phonemes. Then, the phonemes can be processed and aligned together with audio signal.

[0085] - **For the vocoder.** The VCTK dataset is used for pre-training and, similar to the data for synthesis, pure data from the speakers that were not used to train the synthesis model. These data are resynthesized to melspectrograms. The melspectrograms can then be used together with the original pure audio to retrain the vocoder.

Training

[0086] In some embodiments, the PPG model is trained in two stages: pre-training and additional training. A set of augmentations, such as noise and SpecAugment can be used in both stages.

[0087] Pre-training of the PPG model can be performed in an unsupervised manner using clustering. Specifically, Mel-frequency cepstral coefficients (Mfcc) or hidden features of large ASR neural networks can be algorithmically divided into clusters using k-means. Each frame can be assigned to a specific cluster (by a number). Pre-training includes training the PPG model with a classification head to obtain the number of the cluster for a frame. The last hidden layer of features of the PPG model can be clustered (like Mfcc) and used for training an improved PPG model. This procedure can be applied iteratively.

[0088] Additional training of the PPG model is carried out on connectionist temporal classification loss (recognition task) by phoneme sequence and cross-entropy loss (classification task) by phoneme prediction in each frame. To do this, two appropriate heads can be used on top of the encoder in the PPG model. As described in FIG. 7, additional training of a PPG model can be performed using loss for accent reduction. In these embodiments, the training can be performed by providing output of one of intermediate blocks of the PPG model to an accent discriminator with reversal gradient using accent classification

loss function, which may play the role of accent loss function (see blocks 704 and 706 in FIG. 7).

[0089] The synthesis model can be trained on predictions of acoustic values in predictors of values of the output melspectrogram after the decoder and after the post-network. The predictors may include mean squared error (mse) loss according to energy and f0 predictions and binary cross entropy loss according to VAD prediction. For the synthesis model, output speaker embeddings can be trained as parameters that lead to a fixed number of available output speaker embeddings. In other embodiments, the output speaker embeddings can be obtained as hidden features of a pre-trained speaker classification model applied in a streaming manner to input speech data in order to perceive input speaker voice.

[0090] Vocoder can be trained in two stages: training on a large multiple speaker dataset and additional training on resynthesis with the help of the already trained part of the pipeline 300. The optimization methods (training methods) can be combined to train described models jointly. During joint training, a single audio sample can be used for every loss function calculation and every parameter update.

Streaming

[0091] FIG. 9 is a schematic showing details of streaming of an input audio signal, according to some example embodiment.

[0092] The input audio signal can be processed in chunks. A chunk may correspond to a certain window, typically, $3 \sim 10$ frames = $3 \times 256 \sim 10 \times 256$ samples = $35 \sim 116$ ms. Each module in pipeline 300 processes the chunk and outputs a result corresponding to the size of the input chunk.

[0093] In accordance with architectures of modules (feature extraction, synthesis, vocoding), an appropriate number of frames/samples can be cut off (modularly or at the output) to obtain a high-quality result with a low latency. The number of frames/samples can be defined as the total number of frames/samples from the front of the signal.

[0094] The streaming delay can be defined as the time difference between the original moment of speech and the output corresponding to the original one. The streaming delay includes the following components:

[0095] - Architectural delay. This delay is embedded in the indentation to account for a larger future context and thereby improving the processing quality of each module in the pipeline.

[0096] - The size of the chunk. The size of the chunk affects time for waiting for all the data before processing because the modules cannot output the result until the data are obtained by the modules.

[0097] - Processing time. The processing time is a time within which the chunk is completely processed by modules in the pipeline 300. The processing time needed to be adjusted to ensure a stable conversion of input chunks into output chunks.

[0098] In the example of FIG. 9, the size of the chunk is 200 ms, maximum processing time is 100 ms, and the architecture delay is 50 ms. The total delay is 350 ms. The chunks C1, C2, C3, ... are fed into the pipeline 300 in real time. Each output chunk C1', C2', ... corresponds to only one of the input chunk C1, C2, C3, ... Portion 904 of output audio signal 308 corresponds to portion 902 of input audio signal 202. Portion 902 and portion 904 correspond to the same moment of the speech of the user 102. Overall, according to experiments conducted by the inventors, the methods of the present disclosure allow to achieve the total delay of 40-300 ms.

[0099] FIG. 10 is a block diagram 1000 showing a digital signal processing module 1002 for use with pipeline 300 for real-time correction of accent in input audio signals, according to some example embodiments. The digital signal processing module 1002 can be used for enhancement of input audio signal 202 and output audio signal 308. The digital signal processing module 1002 may include submodule 1004 for collecting and storing statistics and context during processing input audio signal 202. The processed input audio signal 202 can be further provided to pipeline 300 for correction of accent. The output of the pipeline 300 can be processed by digital signal processing module 1002 to obtain an output audio signal 308. During processing of the output of pipeline 300, the digital signal processing module 1002 can utilize statistics and context collected by submodule 1004 to restore some characteristics removed from the input audio signal.

[0100] In some embodiments, digital signal processing module 1002 may process input audio signal 202 to remove or attenuate noise, cancel echo, and remove other artifacts. Digital signal processing module 1002 may also perform normalization of loudness of the signal, equalizing the signal, applying a pre-emphasis or de-emphasis to the signal, and enhancing a speech in the signal. In certain embodiments, digital signal processing module 1002 can be integrated in one of the modules of the pipeline 300 as a beginning submodule or inserted between any two

modules of the pipeline 300. In these embodiments, digital signal processing module 1002 can be trained with corresponding losses to imitate digital signal processing algorithms.

[0101] In some embodiments, digital signal processing module 1002 can be used to control loudness of output audio signal 308. For example, digital signal processing module 1002 may auto-gain loudness of input audio signal 202 before pipeline 300 processing and then, based on a user setting, restore or not restore level of loudness of output audio signal 308 to corresponding level of loudness of input audio signal 202.

[0102] FIG. 11 is a flow chart showing a method 1100 for real-time correction of accent in input audio signals, according to some example embodiments. In some embodiments, the operations of method 1100 may be combined, performed in parallel, or performed in a different order. Method 1100 may also include additional or fewer operations than those illustrated. The method 1100 may be performed by processing logic that comprises hardware (e.g., decision making logic, dedicated logic, programmable logic, and microcode), software (such as software run on a general-purpose computer system or a dedicated machine), or a combination of both.

[0103] In block 1102, method 1100 may divide the input audio signal into a stream of input chunks, an input chunk from the stream of input chunks including a pre-defined number of frames of the input audio signal. The input audio signal can be recorded, via an acoustic sensor, from the voice of a user by a computing device implementing method 1100.

[0104] In block 1104, method 1100 may extract, by an acoustic features extraction module, acoustic features from the input chunk and a context associated with the input chunk. The context may include a pre-determined number of the frames belonging to chunks preceding the input chunk in the stream of input chunks. The acoustic features may include a pitch of the input audio signal, an energy of the input audio signal, and a value of a voice activity detector. The voice activity detector may indicate absence of a human voice in the input audio signal or presence of the human voice in the input audio signal.

[0105] In block 1106, method 1100 may extract, by a linguistic features extraction module from the input chunk and the context, linguistic features with a reduced accent or accent-agnostic linguistic features. The linguistic features extraction module may include a neural network trained based on audio data to output the linguistic features and using a loss function to reduce, in the linguistic features, contributions due to a further accent present in the audio

data. The linguistic features may include one of the following: phonetic posteriorgrams or phonetic posteriorgrams with a data-driven phonetic library.

[0106] In block 1108, method 1100 may receive a speaker embedding for a human speaker. The speaker embedding can be pretrained based on audio data including a recorded speech of a target speaker having a further accent. Alternatively, the speaker embedding can be generated based on the input audio signal in real-time.

[0107] In block 1110, method 1100 may generate an output chunk of an output audio signal based on the speaker information (for example, speaker embedding), the acoustic features, and the linguistic features. For example, method 1100 may provide the speaker embedding, the acoustic features, and the linguistic features to a synthesis module to generate a melspectrogram with the reduced accent. The synthesis module may include an encoder, a decoder, and a post-net module designed to improve the output of the decoder. Generating the melspectrogram may include processing the linguistic features by the encoder to generate hidden features; combining the hidden features, the acoustic features, and the speaker embeddings to generate further features; and processing the further features by the decoder and the post-net module to generate the melspectrogram.

[0108] After generating the melspectrogram, method 1100 may provide the melspectrogram to a vocoder to generate an output chunk of an output audio signal. A delay between the first timestamp corresponding to the time when the chunk of the input audio signal is recorded and the second timestamp corresponding to the time when the output chunk is generated can be between 40 ms and 300 ms.

[0109] The acoustic features can be split into a stream of acoustic features chunks corresponding to the chunks in the stream of input chunks. The linguistic features can be split into a stream of linguistic features chunks corresponding to the chunks in the stream of input chunks. The melspectrogram can be split into a stream of melspectrogram chunks corresponding to the chunks in the stream of input chunks. A melspectrogram chunk of the stream of melspectrogram chunks is generated based on the following:

[0110] - an acoustic features chunk of the stream of acoustic features chunks and acoustic features context including the pre-determined number of acoustic features frames belonging to acoustic features chunks preceding the acoustic features chunk in the stream of acoustic features chunks; and

[0111] - a linguistic features chunk of the stream of melspectrogram chunks and linguistic features context including the pre-determined number of linguistic features frames belonging to linguistic features chunks preceding the linguistic features chunk in the stream of acoustic features chunks.

[0112] The method 1100 may include, prior to dividing the input audio signal, processing the input audio signal by a digital signal processing module to adjust one or more characteristics of the input audio signal to improve extraction of the linguistic features and the acoustic features.

[0113] The method 1100 may include, prior to dividing the input audio signal, processing the input audio signal by a digital signal processing module to adjust a loudness of the input audio signal from a first level to a second level. Method 1100 may include, after generating the output chunk of the output audio signal, processing the output chunk by the digital signal processing module to adjust the loudness of the output audio signal to the first level.

[0114] FIG. 12 is schematic 1200 showing details of processing a stream of features by modules of pipeline 300, according to some example embodiments. FIG. 12 shows the first module 1202 and the second module 1204. The first module 1202 and second module 1204 can be any two successive modules in pipeline 300 (computational graph) shown in FIG. 3. The first module 1202 and second module 1204 can also include two successive internal blocks within one of the modules in pipeline 300 (computational graph) shown in FIG. 3.

[0115] Generally, input audio signal 202 and output audio signal 308 (shown in FIG. 3) can be represented using different sample rates. In some embodiments, input audio signal 202 may have 24kHz as a sample rate and output audio signal 308 may have 16kHz as a sample rate. Similarly, all modules and blocks in pipeline 300 (computational graph) may have inputs and outputs of different sample rates and different time size for a frame of input feature. In example of FIG. 12, input 1208 of the first module 1202 may have a first sample rate and input 1212 of second module 1204 succeeding the first module 1202 in the computational graph may have a second sample rate. The output 1210 of the first module 1202 may have an output sample rate different from both the first sample rate of input 1208 of the first module 1202 and input 1212 of the second module 1204. For example, vocoder 306 (shown in FIG. 3) may use input features of single frame time equal to 256/22050 ms to produce 256 times more samples of single sample time period equal to 1/22050 ms.

[0116] Transferring features between first module 1202 and second module 1204 can be performed in accordance with input feature characteristics for second module 1204. Output

1210, that is the stream of features generated by the first module 1202, can be resampled and cached by resampling module 1206 to accumulate input 1212 of the second module 1204 with accordance with the second sample rate and required size of input, including a cache for a content. Resampling can be performed when the time period or sample number of output of first module 1202 mismatch a corresponding input of the second module 1204. Caching of last acquired frames or samples can be used to make the transform of previous chunks and frames of features continuous in time, without breaks and discontinuity. If input and output of adjacent modules or blocks in pipeline 300 match each other, then resampling is not needed.

[0117] Each module (block or node of computational graph) of pipeline 300 may be assigned its own format for inputs and outputs. For streaming purposes, “shift” attribute can be utilized. The “shift” attribute may describe mismatching between input and output. For example, if output 1210 of timestamp (T) ms can be only produced by input 1208 of timestamp (T+s) ms, then (s) is shift (or effective shift) for the input 1208. Every input and output in pipeline 300 may have its own shift value. Output feature shift can be calculated by shifts of inputs and a shift caused by the module structure itself, since modules have a shift when processing the input into output. In order to produce the most effective and qualitative system, the pipeline 300 (computational graph) can be implemented with matching shifts and other characteristics for inputs and outputs of corresponding adjacent blocks.

[0118] Each module (or block) may define only relative value for inputs/outputs shifts. Thus, inputs of modules can be provided with such relative differences. Output shifts can be obtained by addition to the input shift of a processing time of module.

[0119] For example, if input feature shift is 20 ms and module has an additional shift of 100 ms in its processing, then output has a shift of 120 ms. In one example embodiment, a module is defined to have a zero-shifted input feature and processes output A with additional shift of 100 ms, and output B with additional shift 50 ms. Then output A has the shift of 130 ms and output B has a shift of 80 ms. In another example embodiment, the module has input A with shift of 50 ms, input B with shift of 100 ms and output C shift of 200 ms, and inputs A and B are provided from previous processing with shifts 1000 ms and 1050 ms. Then the module returns output C with resulting shift 1150 ms. In yet another example embodiment, inputs A and B are provided from previous processing with shifts that differ from each other by more or less than 50 ms. Then it indicates that the pipeline is incorrectly configured.

[0120] In general, the module has inputs I_1 (shift= t_{i1}), ..., I_n (shift= t_{in}) and produces outputs O_1 (shift= t_{o1}), ..., O_n (shift= t_{on}) (MUST be $\max(t_i) \leq \min(t_o)$), inputs provided for processing (with shifts T_{ik}) are correct if $T_{ik} - t_{ik} = \text{same const}$ for all k . Outputs returned by the module may have shifts, for output k : $T_{ok} = t_{ok} + (T_{i1} - t_{i1})$.

[0121] The shifts can be selected to find a trade-off for quality of output feature vs provided delay. Higher shift values (for example, 100 ms) can be selected for linguistic features and lower shift values can be selected for acoustic features (for example, 20 ms) and input for vocoding (for example, 40 ms).

[0122] FIG. 13 illustrates a method 1300 for real-time correction of accent in input audio signals in accordance with some embodiments. The method 1300 can be implemented by a computer system. In some embodiments, the operations of method 1300 may be combined, performed in parallel, or performed in a different order. Method 1300 may also include additional or fewer operations than those illustrated. The method 1300 may be performed by processing logic that comprises hardware (e.g., decision making logic, dedicated logic, programmable logic, and microcode), software (such as software run on a general-purpose computer system or a dedicated machine), or a combination of both.

[0123] In block 1302, method 1300 may include extracting acoustic features from a chunk of a stream of chunks of the input audio signal by an acoustic features extraction module of a computational graph. The acoustic features may include one or more of the following: a pitch of the input audio signal, a standard deviation of the pitch of the input audio signal, a mean of the pitch of the input audio signal, an energy of the input audio signal, a noise floor of the input audio signal, LPCC of the input audio signal, MFCC of the input audio signal, BFCC of the input audio signal, and custom linear transform of STFT values of audio signal.

[0124] In block 1304, method 1300 may include extracting linguistic features with a reduced accent from the chunk by a linguistic features extraction module of the computational graph.

[0125] In block 1306, method 1300 may include synthesizing, by a synthesis module of the computational graph, a spectrum representation based on the acoustic features, the linguistic features, and a speaker embedding for a human speaker.

[0126] In block 1308, method 1300 may include generating, by a vocoder of the computational graph and based on the spectrum representation, an output chunk of an output audio signal. The spectrum representation may include a melspectrogram with the reduced

accent. The input audio signal can be digitized with a first sample rate and the output audio signal can be digitized with a second sample rate different from the first sample rate.

[0127] In some embodiments, input data of a first module of the computational graph may have a first sample rate and output data of a second module preceding the first module in the computational graph may have a second sample rate different from the first sample rate. In these embodiments, method 1300 may include resampling the output data from the second sample rate to the first sample rate and providing the resampled output data and at least one characteristic of the resampled output data to the first module as the input data.

[0128] In some embodiments, the computing system implementing method 1300 may include at least two processing units, such that at least two modules from the computational graph can be processed in parallel using the two processing units.

[0129] In some embodiments, method 1300 may include providing, as an input to at least one module in the computational graph, a time-shift parameter indicating a difference in timestamps of the chunk of a stream of chunks of the input audio signal and one of the following: input data or output data of the at least one module. Method 1300 may include assigning a further time-shift parameter to output data of at least one module. The further time-shift parameter may include the time-shift parameter and internal delay of processing the input data by at least one module. Method 1300 may include providing the further time-shift parameter and the output data as a further input to a further module succeeding the at least one module in the computational graph. In certain embodiments, the acoustic features can be assigned a lower time-shift parameter than the linguistic features.

[0130] FIG. 14 is a high-level block diagram illustrating an example computer system 1400, within which a set of instructions for causing the machine to perform any one or more of the methodologies discussed herein can be executed. The computer system 1400 may include, refer to, or be an integral part of, one or more of a variety of types of devices, such as a general-purpose computer, a desktop computer, a laptop computer, a tablet computer, a netbook, a mobile phone, a smartphone, a personal digital computer, a smart television device, and a server, among others. In some embodiments, the computer system 1400 is an example of computing devices 106, computing device 110, and computing cloud 112 shown in FIG. 1. Notably, FIG. 14 illustrates just one example of the computer system 1400 and, in some embodiments, the computer system 1400 may have fewer elements/modules than shown in FIG. 14 or more elements/modules than shown in FIG. 14.

[0131] The computer system 1400 may include one or more processor(s) 1402, a memory 1404, one or more mass storage devices 1406, one or more input devices 1408, one or more output devices 1410, and a network interface 1412. The processor(s) 1402 are, in some examples, configured to implement functionality and/or process instructions for execution within the computer system 1400. For example, the processor(s) 1402 may process instructions stored in the memory 1404 and/or instructions stored on the mass storage devices 1406. Such instructions may include components of an operating system 1414 or software applications 1416. The computer system 1400 may also include one or more additional components not shown in FIG. 14, such as a body, a power supply, a power supply, a global positioning system (GPS) receiver, and so forth.

[0132] Memory 1404, according to one example, is configured to store information within the computer system 1400 during operation. The memory 1404, in some example embodiments, may refer to a non-transitory computer-readable storage medium or a computer-readable storage device. In some examples, memory 1404 is a temporary memory, meaning that a primary purpose of the memory 1404 may not be long-term storage. Memory 1404 may also refer to a volatile memory, meaning that memory 1404 does not maintain stored contents when the memory 1404 is not receiving power. Examples of volatile memories include random access memories (RAM), dynamic random access memories (DRAM), static random access memories (SRAM), and other forms of volatile memories known in the art. In some examples, memory 1404 is used to store program instructions for execution by the processor(s) 1402. The memory 1404, in one example, is used by software (e.g., the operating system 1414 or the software applications 1416). Generally, the software applications 1416 refer to software Applications suitable for implementing at least some operations of the methods for real-time correction of accent in input audio signals as described herein.

[0133] The mass storage devices 1406 may include one or more transitory or non-transitory computer-readable storage media and/or computer-readable storage devices. In some embodiments, the mass storage devices 1406 may be configured to store greater amounts of information than the memory 1404. The mass storage devices 1406 may further be configured for long-term storage of information. In some examples, the mass storage devices 1406 include non-volatile storage elements. Examples of such non-volatile storage elements include magnetic hard discs, optical discs, solid-state discs, flash memories, forms of electrically

programmable memories (EPROM) or electrically erasable and programmable memories, and other forms of non-volatile memories known in the art.

[0134] Input devices 1408, in some examples, may be configured to receive input from a user through tactile, audio, video, or biometric channels. Examples of the input devices 1408 may include a keyboard, a keypad, a mouse, a trackball, a touchscreen, a touchpad, a microphone, one or more video cameras, image sensors, fingerprint sensors, or any other device capable of detecting an input from a user or other source, and relaying the input to the computer system 1400, or components thereof.

[0135] The output devices 1410, in some examples, may be configured to provide output to a user through visual or auditory channels. The output devices 1410 may include a video graphics adapter card, a liquid crystal display (LCD) monitor, a light emitting diode (LED) monitor, an organic LED monitor, a sound card, a speaker, a lighting device, a LED, a projector, or any other device capable of generating output that may be intelligible to a user. The output devices 1410 may also include a touchscreen, a presence-sensitive display, or other input/output capable displays known in art.

[0136] The network interface 1412 of the computer system 1400, in some example embodiments, can be utilized to communicate with external devices via one or more data networks such as one or more wired, wireless, or optical networks including, for example, the Internet, intranet, LAN, WAN, cellular phone networks, Bluetooth radio, and an IEEE 902.11-based radio frequency network, Wi-Fi networks®, among others. The network interface 1412 may be a network interface card, such as an Ethernet card, an optical transceiver, a radio frequency transceiver, or any other type of device that can send and receive information.

[0137] The operating system 1414 may control one or more functionalities of the computer system 1400 and/or components thereof. For example, operating system 1414 may interact with the software applications 1416 and may facilitate one or more interactions between the software applications 1416 and components of the computer system 1400. As shown in FIG. 14, the operating system 1414 may interact with or be otherwise coupled to the software applications 1416 and components thereof. In some embodiments, the software applications 1416 may be included in the operating system 1414. In these and other examples, virtual modules, firmware, or software may be part of software applications 1416.

[0138] Thus, systems and methods for real-time correction of accent in input audio signals have been described. Although embodiments have been described with reference to specific

example embodiments, it will be evident that various modifications and changes can be made to these example embodiments without departing from the broader spirit and scope of the present Application. Accordingly, the specification and drawings are to be regarded in an illustrative rather than a restrictive sense.

CLAIMS

What is claimed is:

1. A method for real-time correction of an accent in an input audio signal, the method being implemented by a computing system, the method comprising:
 - extracting acoustic features from a chunk of a stream of chunks of the input audio signal by an acoustic features extraction module of a computational graph;
 - extracting linguistic features with a reduced accent from the chunk by a linguistic features extraction module of the computational graph;
 - synthesizing, by a synthesis module of the computational graph, a spectrum representation based on the acoustic features, the linguistic features, and a speaker embedding for a human speaker; and
 - generating, by a vocoder of the computational graph and based on the spectrum representation, an output chunk of an output audio signal.
2. The method for real-time correction of claim 1, wherein the spectrum representation includes a melspectrogram with the reduced accent.
3. The method for real-time correction of claim 1, wherein the acoustic features include one or more of the following: a pitch of the input audio signal, a standard deviation of the pitch of the input audio signal, a mean of the pitch of the input audio signal, an energy of the input audio signal, a noise floor of input audio signal, Linear Prediction Cepstral Coefficients (LPCC) of the input audio signal, Mel Frequency Cepstral Coefficients (MFCC) of the input audio signal, and Bark Frequency Cepstral coefficients (BFCC) of the input audio signal.
4. The method for real-time correction of claim 1, wherein:
 - the input audio signal is digitized with a first sample rate; and
 - the output audio signal is digitized with a second sample rate different from the first sample rate.
5. The method for real-time correction of claim 1, wherein input data of a first module of the computational graph have a first sample rate and output data of a second module preceding the first module in the computational graph have a second sample rate different from the first sample rate.

6. The method for real-time correction of claim 5, further comprising resampling the output data from the second sample rate to the first sample rate and providing the resampled output data and at least one characteristic of the resampled output data to the first module as the input data.
7. The method for real-time correction of claim 1, wherein the computing system includes at least two processing units and at least two modules from the computational graph are processed in parallel using the at least two processing units.
8. The method for real-time correction of claim 1, further comprising providing, as an input to at least one module in the computational graph, a time-shift parameter indicating a difference in timestamps of the chunk of a stream of chunks of the input audio signal and one of the following: input data and output data of the at least one module.
9. The method for real-time correction of claim 8, further comprising:
 - assigning a further time-shift parameter to output data of the at least one module, the further time-shift parameter including the time-shift parameter and internal delay of processing the input data by the at least one module; and
 - providing the further time-shift parameter and the output data as a further input to a further module succeeding the at least one module in the computational graph.
10. The method for real-time correction of claim 9, wherein the acoustic features are assigned a lower time-shift parameter than the linguistic features.
11. A system for real-time correction of an accent in an input audio signal, the system comprising a computational graph including acoustic features extraction modules, a linguistic features extraction module, a synthesis module, and a vocoder, wherein:
 - the acoustic features extraction modules are configured to extract, from a chunk of a stream of chunks of the input audio signal, acoustic features;
 - the linguistic features extraction module is configured to extract, from the chunk, linguistic features with a reduced accent;
 - the synthesis module is configured to synthesize a spectrum representation based on the acoustic features, the linguistic features, and a speaker embedding for a human speaker; and
 - the vocoder is configured to generate, based on the spectrum representation, an output chunk of an output audio signal.

12. The system for real-time correction of claim 11, wherein the spectrum representation includes a melspectrogram with the reduced accent.

13. The system for real-time correction of claim 11, wherein the acoustic features include one or more of the following: a pitch of the input audio signal, a standard deviation of the pitch of the input audio signal, a mean of the pitch of the input audio signal, an energy of the input audio signal, a noise floor of input audio signal, Linear Prediction Cepstral Coefficients (LPCC) of the input audio signal, Mel Frequency Cepstral Coefficients (MFCC) of the input audio signal, and Bark Frequency Cepstral Coefficients (BFCC) of the input audio signal.

14. The system for real-time correction of claim 11, wherein:

the input audio signal is digitized with a first sample rate; and
the output audio signal is digitized with a second sample rate different from the first sample rate.

15. The system for real-time correction of claim 11, wherein input data of a first module of the computational graph have a first sample rate and output data of a second module preceding the first module in the computational graph have a second sample rate different from the first sample rate.

16. The system for real-time correction of claim 15, further comprising an intermediate module configured to resample the output data from the second sample rate to the first sample rate and provide the resampled output data and at least one characteristic of the resampled output data to the first module as the input data.

17. The system for real-time correction of claim 11, wherein at least two modules from the computational graph are configured to process data in parallel.

18. The system for real-time correction of claim 11, wherein an input to at least one module in the computational graph includes a time-shift parameter indicating a difference in timestamps of the chunk of a stream of chunks of the input audio signal and one of the following: input data or output data of the at least one module.

19. The system for real-time correction of claim 18, wherein the at least one module is configured to:

assign a further time-shift parameter to output data of the at least one module, the further time-shift parameter including the time-shift parameter and internal delay of processing the input data by the at least one module; and

provide the further time-shift parameter and the output data as a further input to a further module succeeding the at least one module in the computational graph.

20. A non-transitory computer-readable storage medium, the computer-readable storage medium including instructions that, when executed by a computer, cause the computer to:

extract, by an acoustic features extraction module of a computational graph, acoustic features from a chunk of a stream of chunks of an input audio signal;

extract, by a linguistic features extraction module of the computational graph, and from the chunk, linguistic features with a reduced accent;

synthesize, by a synthesis module of the computational graph, a spectrum representation based on the acoustic features, the linguistic features, and a speaker embedding for a human speaker; and

generate, by a vocoder of the computational graph and based on the spectrum representation, an output chunk of an output audio signal.

ABSTRACT

Systems and methods for real-time correction of an accent in an input audio signal are provided. A method includes extracting acoustic features from a chunk of a stream of chunks of the input audio signal by an acoustic features extraction module of a computational graph; extracting, by a linguistic features extraction module of the computational graph, linguistic features with a reduced accent from the chunk; synthesizing, by a synthesis module of the computational graph, a spectrum representation based on the acoustic features, the linguistic features, and a speaker embedding for a human speaker; and generating, by a vocoder of the computational graph and based on the spectrum representation, an output chunk of an output audio signal. The input audio signal is digitized with a first sample rate and the output audio signal is digitized with a second sample rate.

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UTILITY PATENT APPLICATION TRANSMITTAL <i>(Only for new nonprovisional applications under 37 CFR 1.53(b))</i>		Attorney Docket No.	1234.001CIP
		First Named Inventor	Andrei Golman
		Title	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS
		Priority Mail Express® Label No.	
APPLICATION ELEMENTS <i>See MPEP chapter 600 concerning utility patent application contents.</i>		Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	
1. ☒ Fee Transmittal Form (PTO/SB/17 or equivalent) 2. ☒ Applicant asserts small entity status. See 37 CFR 1.27 3. ☐ Applicant certifies micro entity status. See 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent. 4. ☒ Specification [Total Pages <u>33</u>] Both the claims and abstract must start on a new page. (See MPEP § 608.01(a) for information on the preferred arrangement) 5. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets <u>14</u>] 6. Inventor's Oath or Declaration [Total Pages <u>2</u>] (including substitute statements under 37 CFR 1.64 and assignments serving as an oath or declaration under 37 CFR 1.63(e)) a. ☒ Newly executed (original or copy) b. ☐ A copy from a prior application (37 CFR 1.63(d)) 7. ☒ Application Data Sheet * See note below. See 37 CFR 1.76 (PTO/AIA/14 or equivalent) 8. CD-ROM or CD-R in duplicate, large table, or Computer Program (Appendix) ☐ Landscape Table on CD 9. Nucleotide and/or Amino Acid Sequence Submission (if applicable, items a. – c. are required) a. ☐ Computer Readable Form (CRF) b. ☐ Specification Sequence Listing on: i. ☐ CD-ROM or CD-R (2 copies); or ii. ☐ Paper c. ☐ Statements verifying identity of above copies			

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0032. Public burden for this form is estimated to average 12 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. If filing this completed form by mail, send to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013). <https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf>

Routine uses of the information in this record may include disclosure to: 1) law enforcement, in the event that the system of records indicates a violation or potential violation of law; 2) a Federal, state, local, or international agency, in response to its request; 3) a contractor of the USPTO having need for the information in order to perform a contract; 4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record; 5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record; 6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations; 7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals; 8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)); 9) the Office of Personnel Management (OPM) for personnel research purposes; and 9) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Additional Uses

Additional USPTO uses of the information in this record may include disclosure to: 1) the International Bureau of the World Intellectual Property Organization, if the record is related to an international application filed under the Patent Cooperation Treaty; 2) the public i) after publication of the application pursuant to 35 U.S.C. 122(b), ii) after issuance of a patent pursuant to 35 U.S.C. 151, iii) if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections, or an issued patent, or iv) without publication of the application or patent under the specific circumstances provided for by 37 CFR 1.14(a)(1)(v)-(vii); and/or 3) the National Archives and Records Administration, for inspection of records.

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1234.001CIP
		Application Number	
Title of Invention	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

☐	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	---

Inventor Information:

Inventor	1				Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Andrei		Golman		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	San Francisco	State/Province	CA	Country of Residence	US

Mailing Address of Inventor:

Address 1	228 Park Ave S, Pmb 85451				
Address 2					
City	New York	State/Province	NY		
Postal Code	10003	Country	US		

Inventor	2				Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Dmitrii		Sadykov		
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service					
City	Yerevan	Country of Residence	AM		

Mailing Address of Inventor:

Address 1	228 Park Ave S, Pmb 85451				
Address 2					
City	New York	State/Province	NY		
Postal Code	10003	Country	US		

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button.

Add

Correspondence Information:

PGR2026-00032

Krisp Technologies EX1002 Page 36

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1234.001CIP
		Application Number	
Title of Invention	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS		

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ An Address is being provided for the correspondence information of this application.

Customer Number	85162		
Email Address	gkhayet@ipjurists.com	Add Email	Remove Email

Application Information:

Title of the Invention	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS		
Attorney Docket Number	1234.001CIP	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	14	Suggested Figure for Publication (if any)	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	85162		

PGR2026-00032

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1234.001CIP
		Application Number	
Title of Invention	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	18083727	2022-12-19
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
18083727	Claims benefit of provisional	63297901	2022-01-10
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)	Remove
Additional Foreign Priority Data may be generated within this form by selecting the Add button.				Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013. NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.	PGR2026-00032
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1234.001CIP
		Application Number	
Title of Invention	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1234.001CIP
		Application Number	
Title of Invention	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant	1	Remove
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section. Clear		
☒ Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.		Person who shows sufficient proprietary interest
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:		
Name of the Deceased or Legally Incapacitated Inventor:		
If the Applicant is an Organization check here. ☒		
Organization Name	Intone Inc.	
Mailing Address Information For Applicant:		
Address 1	228 Park Ave S, Pmb 85451	
Address 2		
City	New York	State/Province NY
Country	US	Postal Code 10003
Phone Number		Fax Number
Email Address		
Additional Applicant Data may be generated within this form by selecting the Add button. Add		

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1234.001CIP
		Application Number	
Title of Invention	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS		

Assignee 1				
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.				
Remove				
If the Assignee or Non-Applicant Assignee is an Organization check here. ☐				
Prefix	Given Name	Middle Name	Family Name	Suffix
Mailing Address Information For Assignee including Non-Applicant Assignee:				
Address 1				
Address 2				
City		State/Province		
Country ⁱ		Postal Code		
Phone Number		Fax Number		
Email Address				
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add				

Signature:					Remove
NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).					
This Application Data Sheet must be signed by a patent practitioner if one or more of the applicants is a juristic entity (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, all joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of all joint inventor-applicants.					
See 37 CFR 1.4(d) for the manner of making signatures and certifications.					
Signature	/Georgiy Khayet/			Date (YYYY-MM-DD)	2023-07-31
First Name	Georgiy	Last Name	Khayet	Registration Number	59595
Additional Signature may be generated within this form by selecting the Add button. Add					

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1234.001CIP
	Application Number	
Title of Invention	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

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

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

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

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

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS
-------------------------------	---

As the below named inventor, I hereby declare that:

This declaration is directed to: ☒ The attached application, or
☐ United States application or PCT international application number _____
 filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

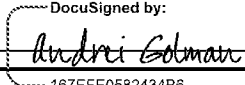
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Andrei Golman Date (Optional) : _____

Signature: 
DocuSigned by: 167EFE0582434B6...

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0032. Public burden for this form is estimated to average 1 minute per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS.** If filing this completed form by mail, send to: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 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.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of
Invention

REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

As the below named inventor, I hereby declare that:

This declaration is directed to: ☒ The attached application, or

☐ United States application or PCT international application number _____
filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

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LEGAL NAME OF INVENTOR

Inventor: Dmitrii Sadykov Date (Optional) : _____

Signature: Dmitrii Sadykov

DocuSigned by:

4A3DB0BFF7D3476...

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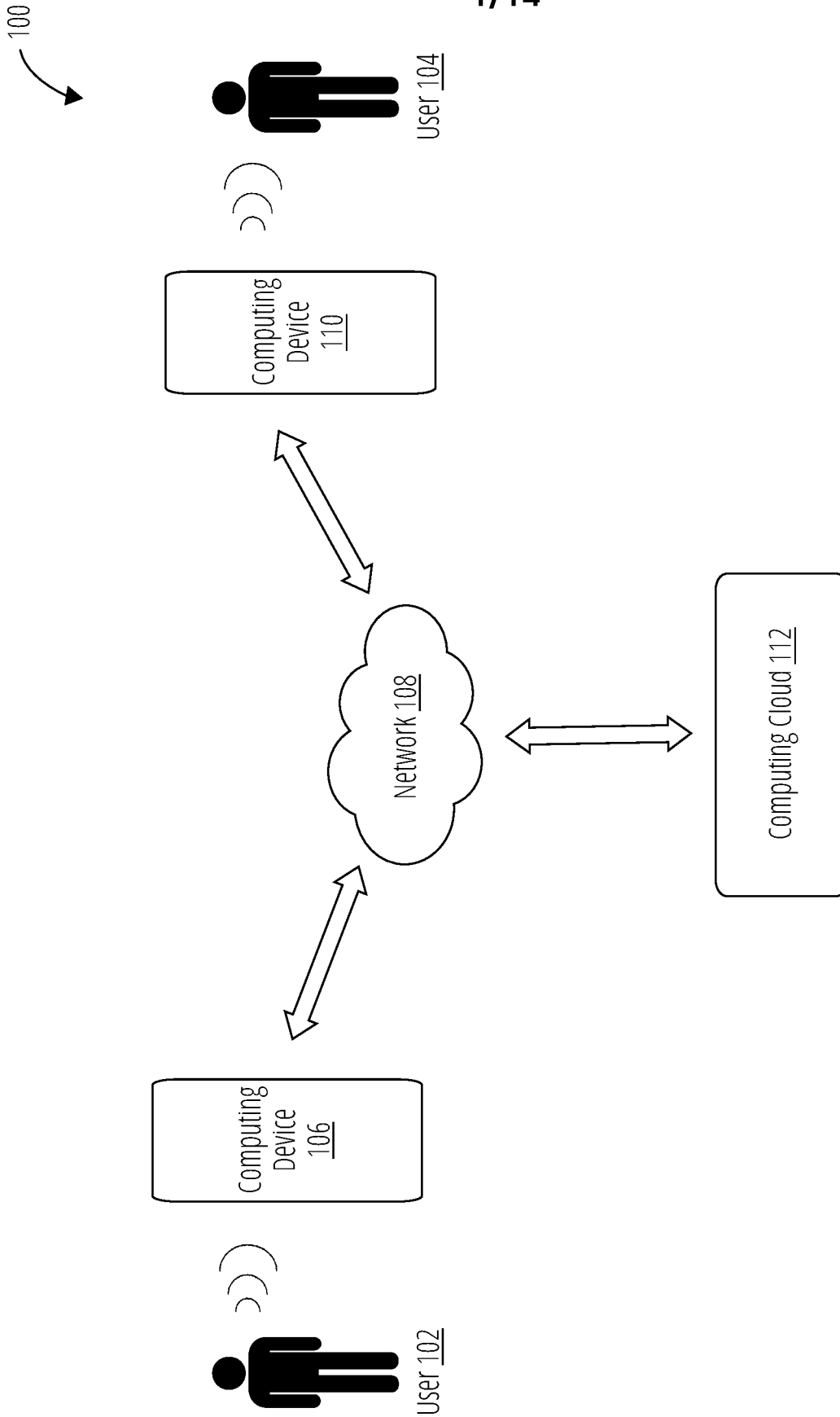


FIG. 1

200

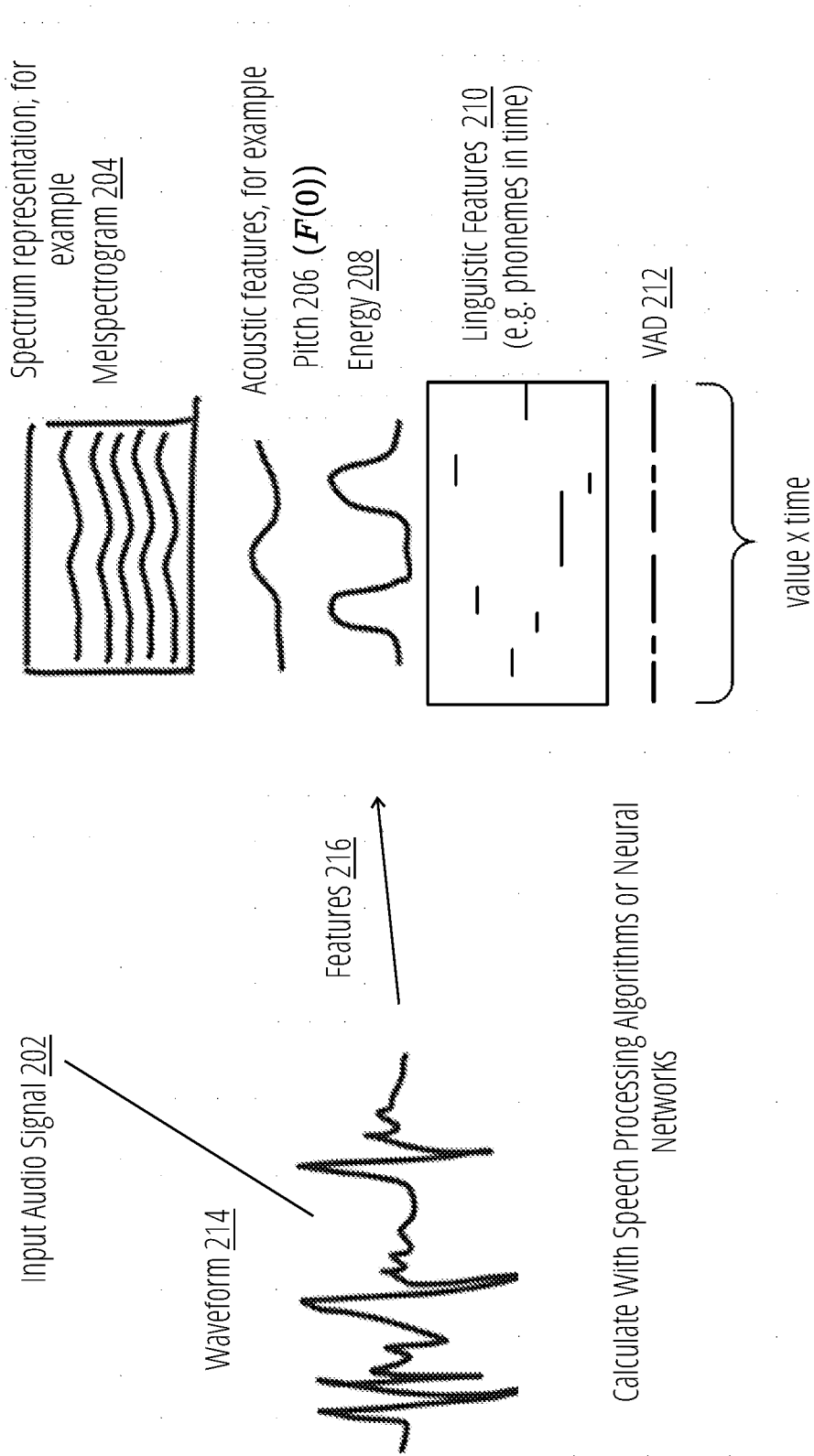


FIG. 2

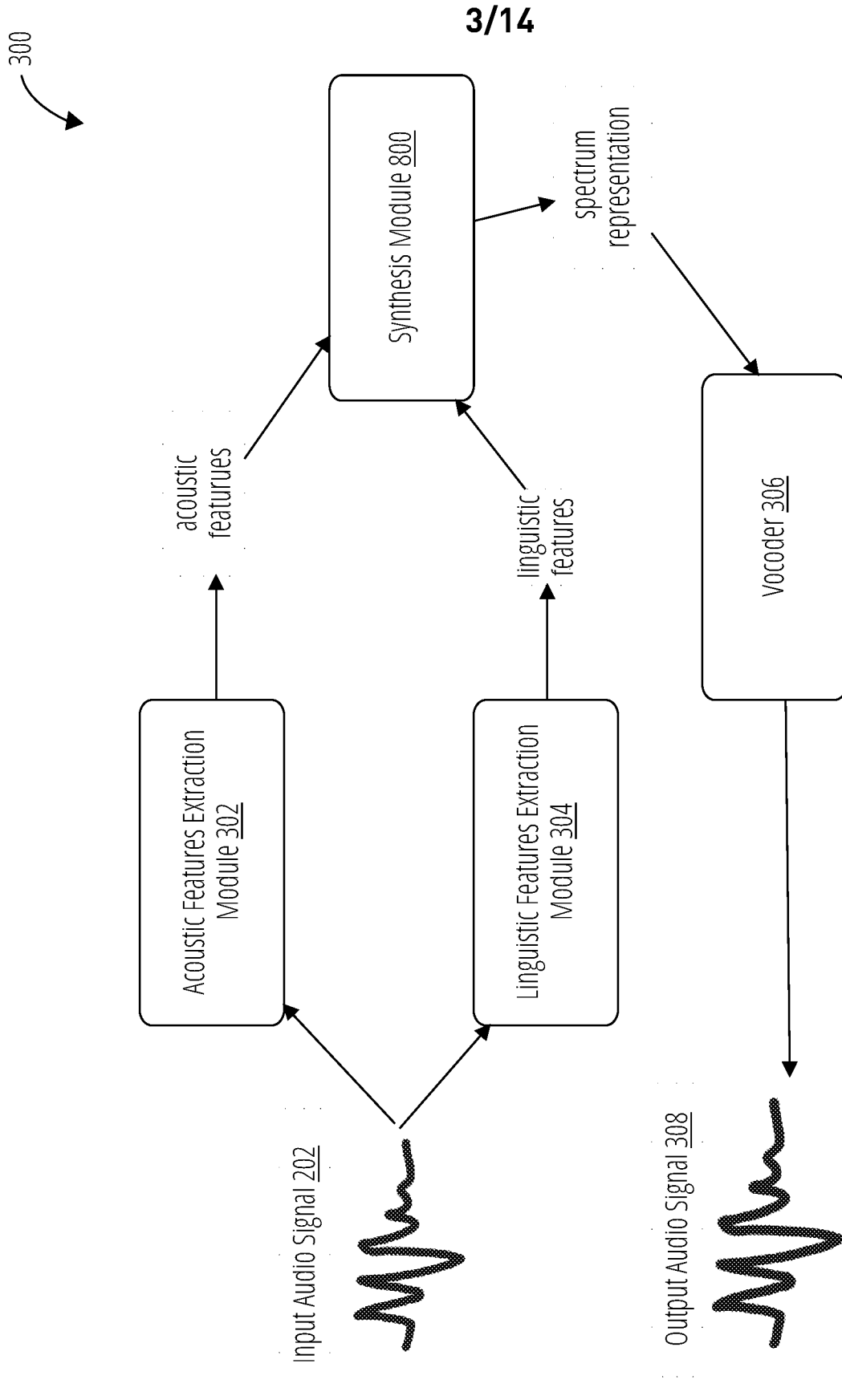


FIG. 3

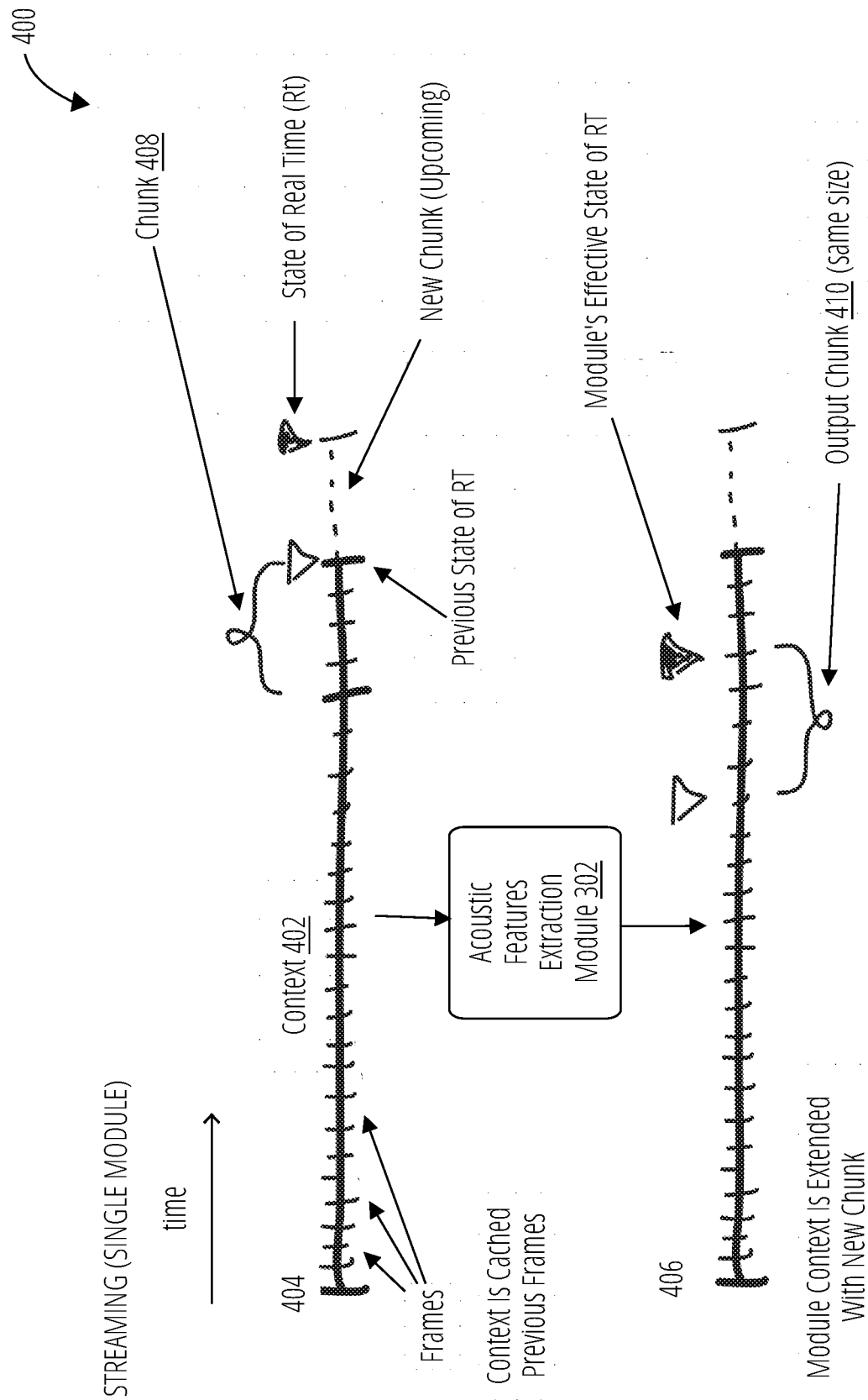


FIG. 4

500

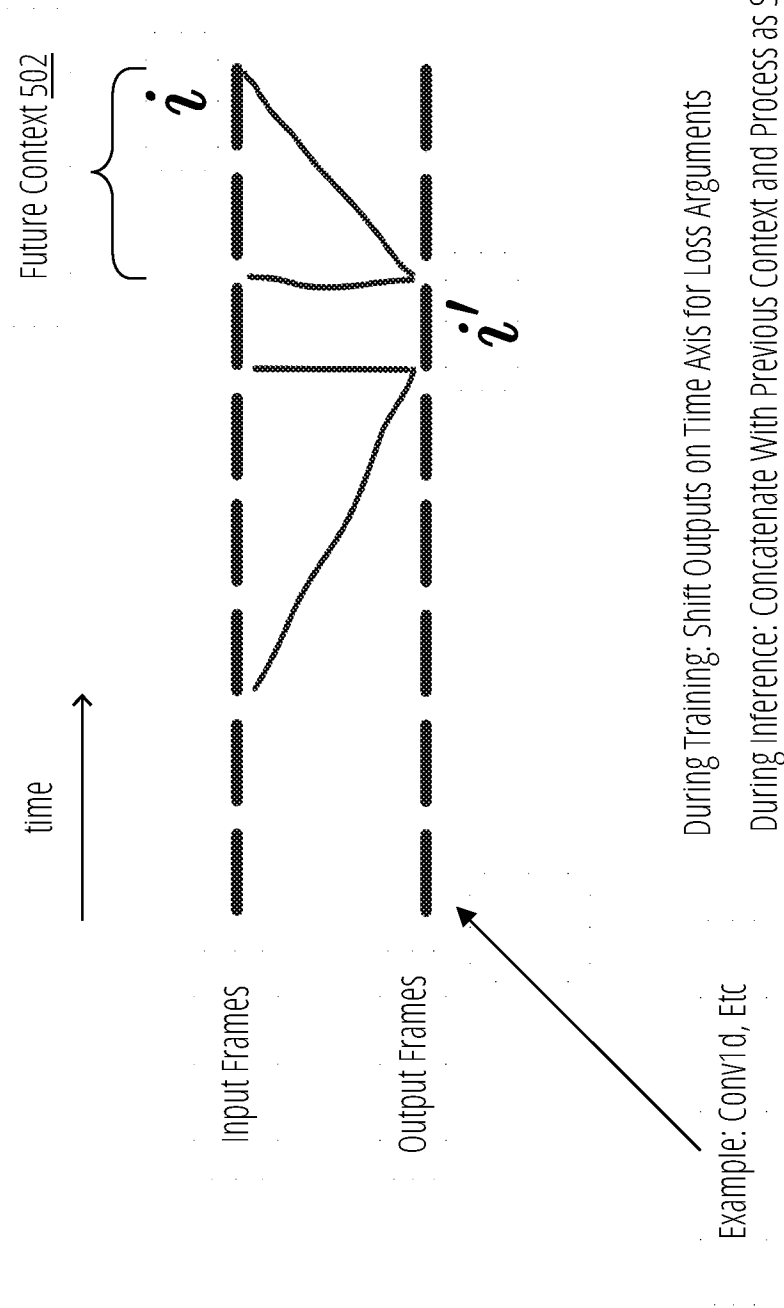
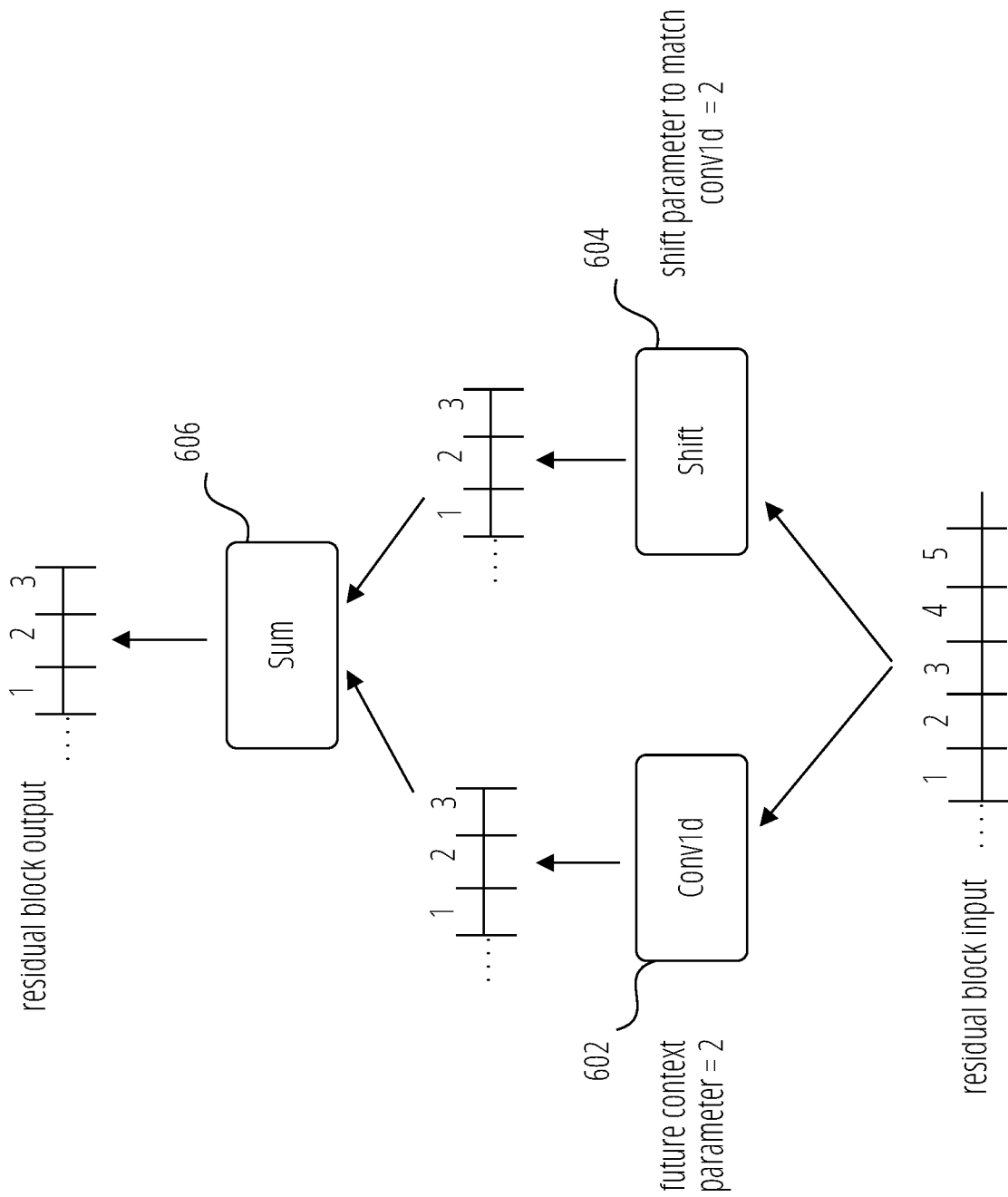


FIG. 5

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600

**FIG. 6**

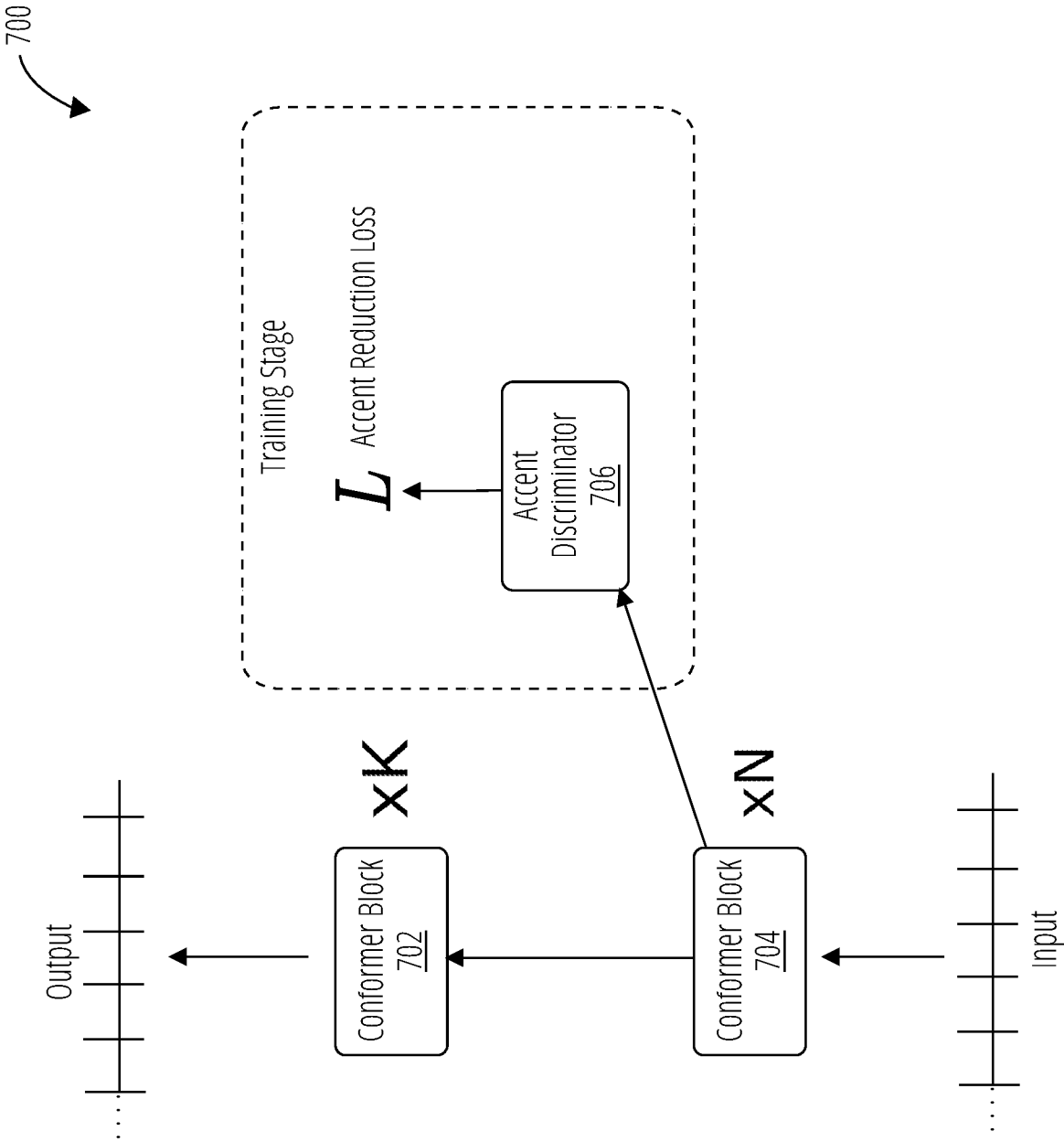


FIG. 7

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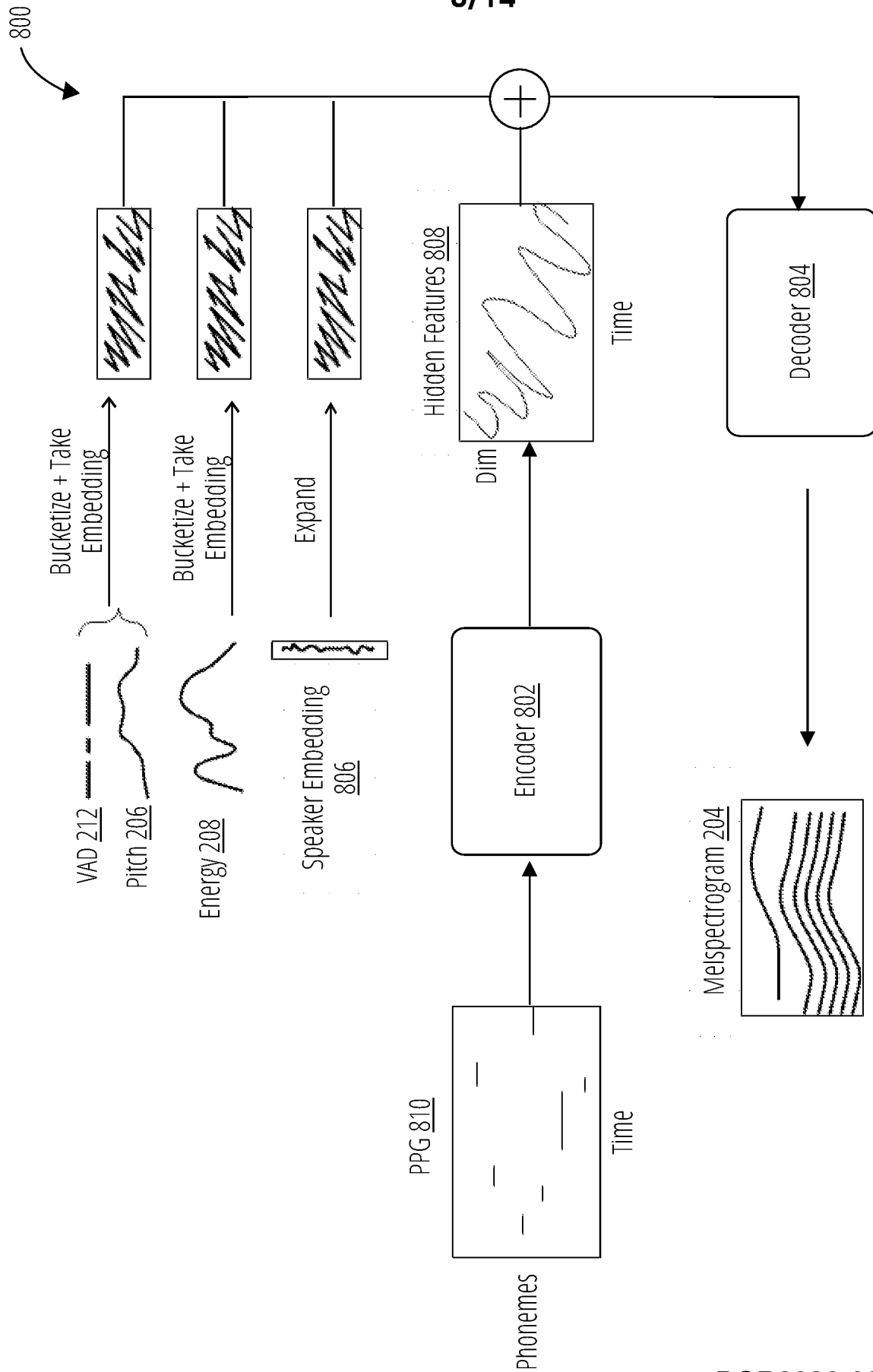


FIG. 8

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900

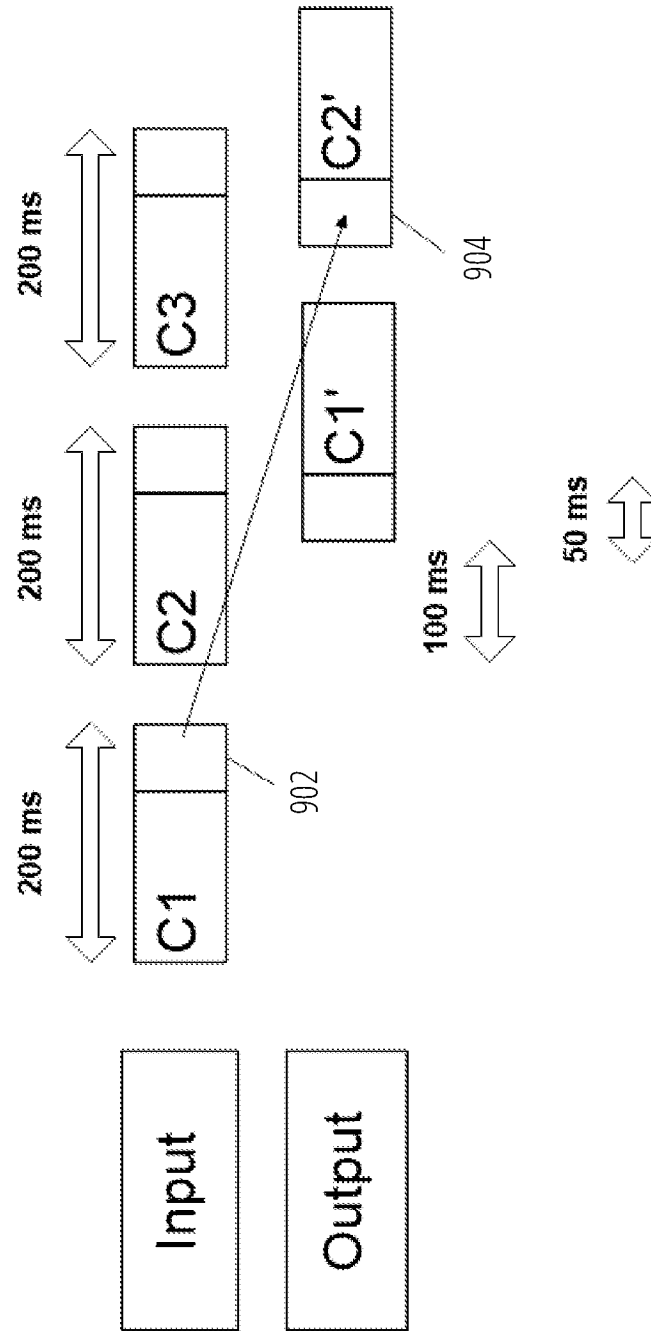


FIG. 9

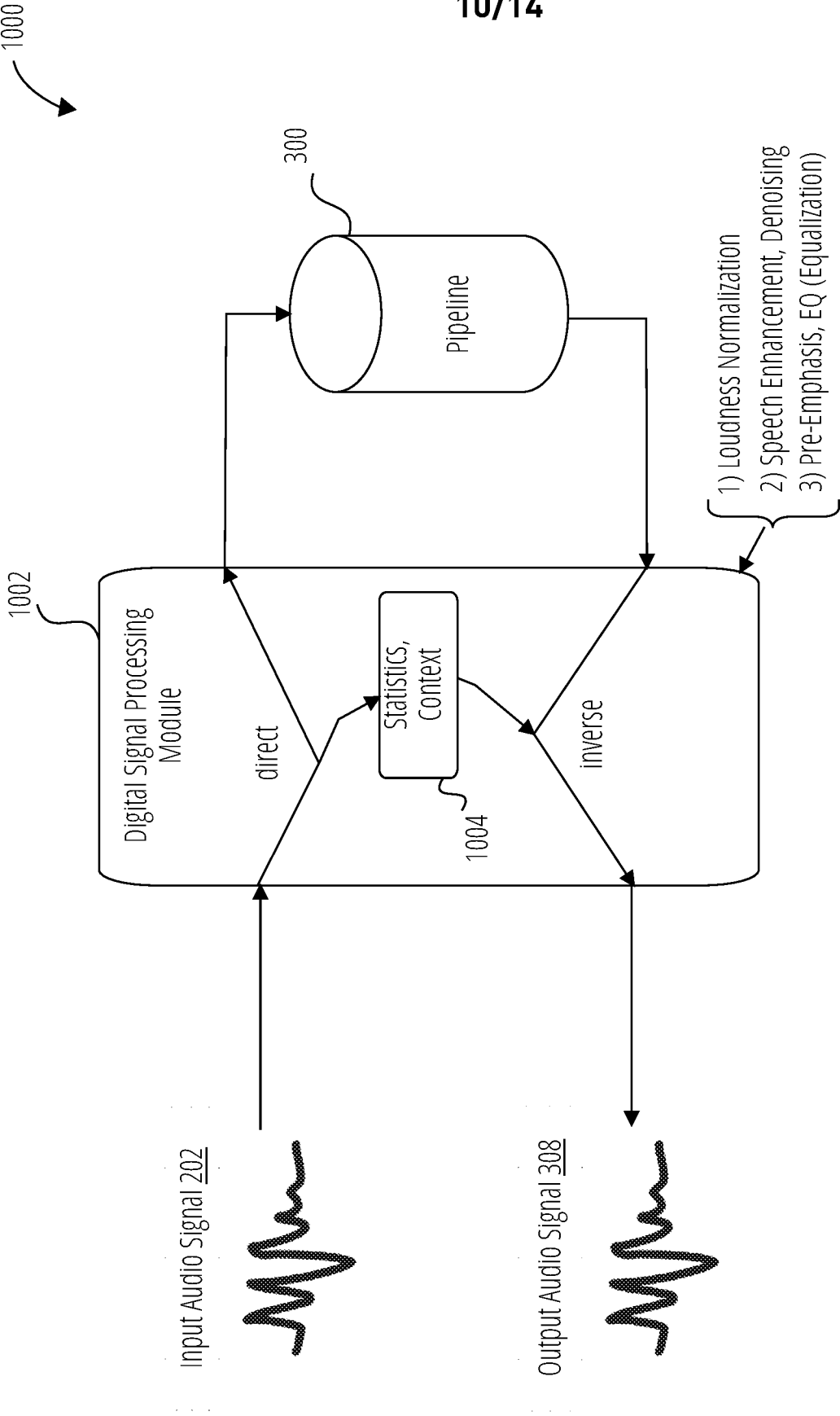
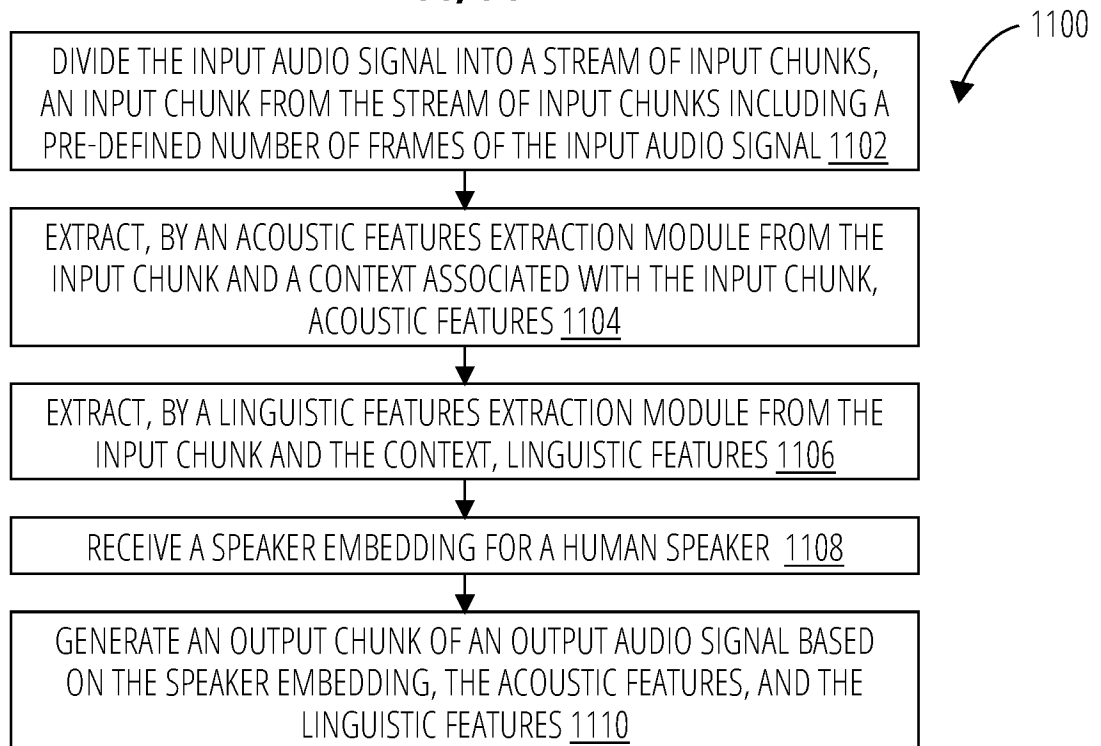
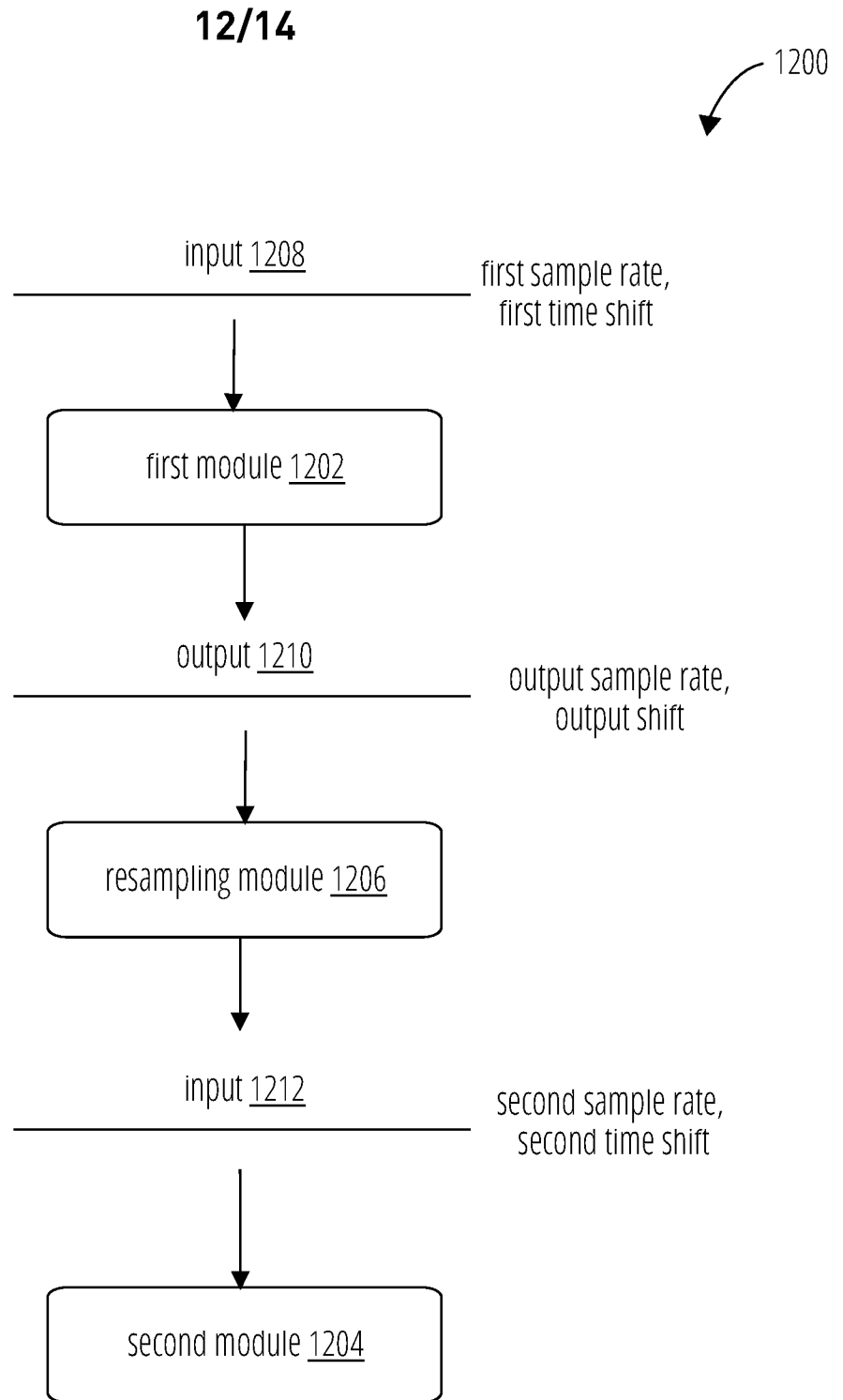
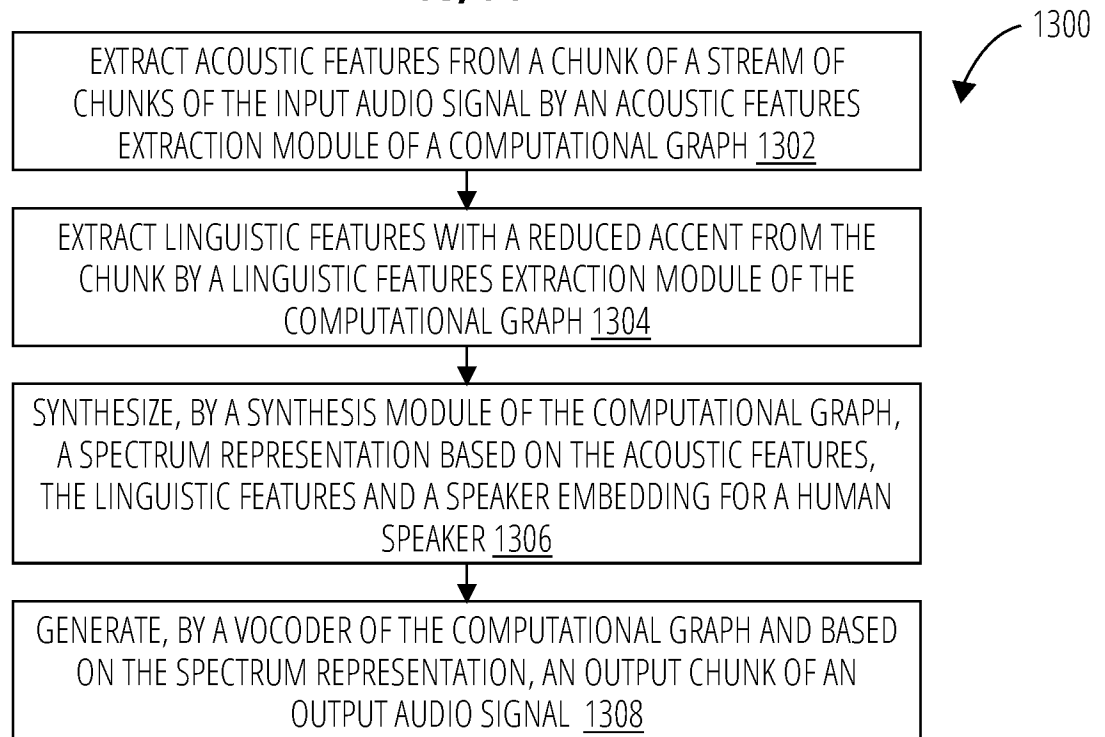


FIG. 10

11/14**FIG. 11**

**FIG. 12**

13/14**FIG. 13**

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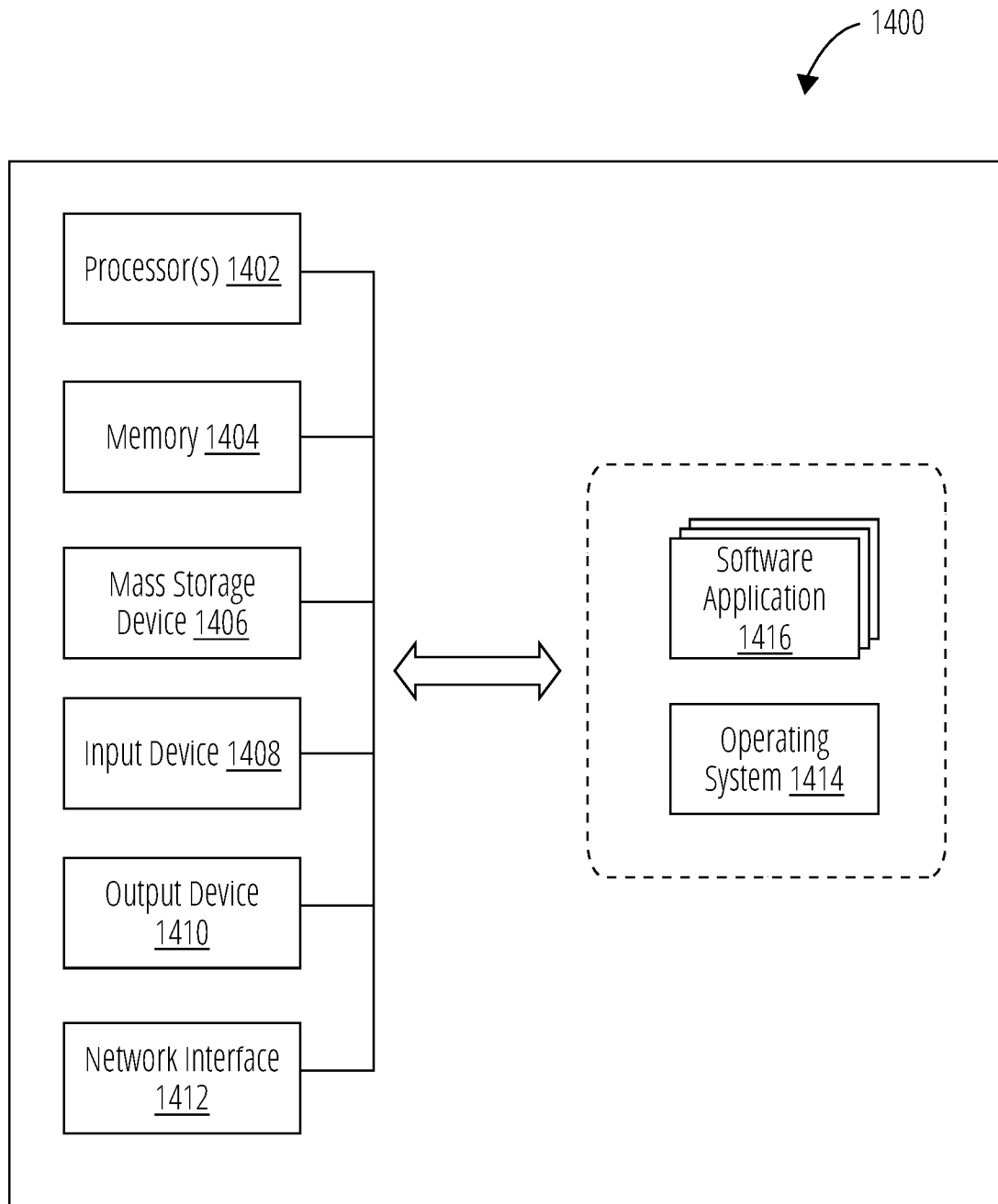


FIG. 14

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS		
First Named Inventor/Applicant Name:		Andrei Golman		
Filer:		Georgiy L. Khayet/Irina Klimova		
Attorney Docket Number:		1234.001CIP		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	64	64
UTILITY SEARCH FEE	2111	1	280	280
UTILITY EXAMINATION FEE	2311	1	320	320
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				664

Electronic Acknowledgement Receipt

EFS ID:	48369666
Application Number:	18228023
International Application Number:	
Confirmation Number:	4049
Title of Invention:	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS
First Named Inventor/Applicant Name:	Andrei Golman
Customer Number:	85162
Filer:	Georgiy L. Khayet/Irina Klimova
Filer Authorized By:	Georgiy L. Khayet
Attorney Docket Number:	1234.001CIP
Receipt Date:	31-JUL-2023
Filing Date:	
Time Stamp:	09:52:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$664
RAM confirmation Number	E20237U053416694
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File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal of New Application	1-1234_001CIP_Transmittal.pdf	438348	no	2
			46c382c15de81b5ea93274876896e53ebe8460d0		
Warnings:					
Information:					
2	Application Data Sheet	2-1234_001CIP_ADS.pdf	2277747	no	8
			eb0390851cd8891552dd0d4005a5ce9edf5eb496		
Warnings:					
Information:					
3	Oath or Declaration filed	3-DECL_1234_001CIP_Andrei_Golman.pdf	378448	no	1
			628dfaf34765e38179b1eabca556435f0a7fd052		
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4	Oath or Declaration filed	4-DECL_1234_001CIP_Dmitrii_Sadykov.pdf	376949	no	1
			373283d69f683efa32d2abd7843ae57ea1d4b676		
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5	Specification	5-1234001CIP_Specification.pdf	284632	no	33
			7b6aa3d0e7cac5107b62067a7a1f4cb4bb3436cf		
Warnings:					
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6	Drawings-only black and white line drawings	6-1234001CIP_Figures.pdf	369166	no	14
			33770de93af44f7bd7627c178ea0861785f148e9		
Warnings:					
Information:					
7	Fee Worksheet (SB06)	fee-info.pdf	43815	no	2
			28657d2daef3f8ff9d1c71c96d662e28ca4ff8b7		
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Total Files Size (in bytes):			4169105		
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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
18/228,023	07/31/2023		664	1234.001CIP	20	3

CONFIRMATION NO. 4049

85162
IP Jurists PC
100 Spectrum Center Dr
Suite 900
Irvine, CA 92618

FILING RECEIPT



0000000060482569

Date Mailed: 09/26/2023

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Inventor(s)

Andrei Golman, San Francisco, CA;
Dmitrii Sadykov, Yerevan, ARMENIA;

Applicant(s)

Intone Inc., New York, NY;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CIP of 18/083,727 12/19/2022 PAT 11,715,457
which claims benefit of 63/297,901 01/10/2022

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Projected Publication Date: 01/04/2024

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

Preliminary Class

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

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Substitute for Form PTO-875

Application or Docket Number
18/228,023

APPLICATION AS FILED - PART I

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FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)			RATE(\$)	FEE(\$)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	64			N/A	
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	280			N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	320			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	20	minus 20 = *	0	x = 0		OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3 = *		x = 0				
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0				
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0				
			TOTAL	664			TOTAL	

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

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	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =			
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =			
	Application Size Fee (37 CFR 1.16(s))											
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))											
						TOTAL ADD'L FEE		OR			TOTAL ADD'L FEE	

		(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)				RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =			
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =			
	Application Size Fee (37 CFR 1.16(s))											
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))											
						TOTAL ADD'L FEE		OR			TOTAL ADD'L FEE	

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
18/228,023	07/31/2023	Andrei Golman	1234.001 CIP

CONFIRMATION NO. 4049

85162
IP Jurists PC
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Suite 900
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PUBLICATION NOTICE



OC000000066581542

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Title: REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

Publication No. US-2024-0005907-A1

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

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA/82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	18/228,023
Filing Date	07/31/2023
First Named Inventor	Andrei Golman
Title	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS
Art Unit	
Examiner Name	
Attorney Docket Number	264248.000211

SIGNATURE of Applicant or Patent Practitioner

Signature	/Nicholas J. Gallo/	Date (Optional)	2025-01-24
Name	Nicholas J. Gallo	Registration Number	60,758
Title (if Applicant is a juristic entity)	Attorney for Applicant		
Applicant Name (if Applicant is a juristic entity)	Sanas ai Inc.		

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



*Total of 1 forms are submitted.

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0035. Public burden for this form is estimated to average 3 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS.** If filing this completed form by mail, send to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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

POWER OF ATTORNEY BY APPLICANT

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

Application Number	Filing Date

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

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

11951

OR

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

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

☒ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name

Address

City

State

Zip

Country

Telephone

Email

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

Sanas.ai Inc.

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

SIGNATURE of Applicant for Patent

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

Signature

Date (Optional)

Name

Maxim Serebryakov

Title

Chief Executive Officer

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

☒ Total of 1 forms are submitted.

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

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 3.

PCR2026-00032

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

STATEMENT UNDER 37 CFR 3.73(c)Applicant/Patent Owner: Sanas.ai Inc.Application No./Patent No.: 18/228,023Filed/Issue Date: 07/31/2023Titled: REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALSSanas.ai Inc., a corporation

(Name of Assignee)

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

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

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

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

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

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

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

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

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

1. From: Andrei Golman and Dimitrii Sadykov To: Intone Inc.The document was recorded in the United States Patent and Trademark Office at
Reel 064431, Frame 0284, or for which a copy thereof is attached.2. From: Intone Inc. To: Sanas.ai Inc.The document was recorded in the United States Patent and Trademark Office at
Reel 069979, Frame 0523, or for which a copy thereof is attached.

[Page 1 of 2]

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

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

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Krisp Technologies EX1002 Page 73

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

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

4. From: _____ To: _____

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

5. From: _____ To: _____

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

6. From: _____ To: _____

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

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

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

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

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

/Nicholas J. Gallo/

2025-01-24

Signature

Date

Nicholas J. Gallo

60,758

Printed or Typed Name

Title or Registration Number

[Page 2 of 2]

Privacy Act Statement

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

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

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

UNITED STATES
PATENT AND TRADEMARK OFFICEP.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov**ELECTRONIC ACKNOWLEDGEMENT RECEIPT**APPLICATION #
18/228,023RECEIPT DATE / TIME
01/24/2025 03:05:06 PM Z ETATTORNEY DOCKET #
1234.001CIP**Title of Invention**

REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

Application InformationAPPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 4049

FILED BY Mary Frances Heeks

PATENT CENTER # 68902486

FILING DATE 07/31/2023

CUSTOMER # 85162

FIRST NAMED
INVENTOR Andrei GolmanCORRESPONDENCE
ADDRESS -

AUTHORIZED BY Nicholas Gallo

Documents**TOTAL DOCUMENTS: 2**

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
20250124_POA_and_Transmittal_264248_000211.pdf	2	Power of Attorney	314 KB
20250124_Statement_Under_37_CFR_3_73_c_264248_000211.pdf	3	Assignee showing of ownership per 37 CFR 3.73	108 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
20250124_POA_and_Transmittal_264248_000211.pdf	D1055B76E7658B19D27B105EA790754647EF743E63E0B465526D8A12F838CAA3212202527E2AFB9A4E49828AB49366747FD65015257D079D1C6437693FDD1E0D

PGR2026-00032

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20250124_Statement_Under_3	74B1C34B257DBC492C070022BC5F4A9D48A617CA693A7D8A
7_CFR_3_73_c_	81133EE84D57D4ADBC65CF9F8197A0459901F55049B0646D7
264248_000211.pdf	BFD999B2AA4590075D334AAF0DCFAD4

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
18/228,023	07/31/2023	Andrei Golman	1234.001 CIP

85162
IP Jurists PC
100 Spectrum Center Dr
Suite 900
Irvine, CA 92618

CONFIRMATION NO. 4049
IMPROPER CPOA LETTER



OC000000083708979

Date Mailed: 01/30/2025

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the power of attorney filed 01/24/2025. The power of attorney in this application is not accepted for the reason(s) listed below:

The power of attorney filed 01/24/2025 has not been accepted because the power of attorney must be signed by the applicant for patent. See 37 CFR 1.32(b)(4).

- The person or entity attempting the change to power of attorney is not the applicant of record in the application. Any request to change the applicant once the applicant has been specified must include (1) an application data sheet (ADS) specifying the new applicant in the Applicant Information section, and (2) a statement under 37 CFR 3.73(c) (USPTO Form PTO/AIA/96 or an equivalent) to show chain of title to the new applicant. The ADS must contain markings to show the information that is being changed, with underlining for insertions and strike-through or brackets for text removed. See 37 CFR 1.76(c)(2).

Because the request to change or update the applicant cannot be accepted, the power of attorney is not properly signed by the applicant and cannot be accepted. The change to applicant must be acceptable before the new applicant can appoint power of attorney.

/tlulu/

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

11951
Troutman Pepper Locke LLP (Rochester)
70 Linden Oaks
Suite 210
Rochester, NY 14625
UNITED STATES

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1234-001CHP 264248.000211
		Application Number	18/228,023
Title of Invention	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor	1				Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Andrei		Golman			
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service						
City	San Francisco	State/Province	CA	Country of Residence	US	
Mailing Address of Inventor:						
Address 1		228 Park Ave S, Pmb 85451				
Address 2						
City	New York	State/Province	NY			
Postal Code	10003	Country	US			
Inventor	2				Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Dmitrii		Sadykov			
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service						
City	Yerevan	Country of Residence	AM			
Mailing Address of Inventor:						
Address 1		228 Park Ave S, Pmb 85451				
Address 2						
City	New York	State/Province	NY			
Postal Code	10003	Country	US			
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.						
Add						

Correspondence Information:

PGR2026-00032

Krisp Technologies EX1002 Page 79

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1234.001CIP- 264248.000211
		Application Number	18/228,023
Title of Invention	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS		

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ An Address is being provided for the correspondence information of this application.

Customer Number	05162 11951		
Email Address	gkhayet@ipjurists.com	Add Email	Remove Email

Application Information:

Title of the Invention	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS		
Attorney Docket Number	1234.001CIP 264248.000211	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	14	Suggested Figure for Publication (if any)	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	05162 11951		

PGR2026-00032

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1234-994GIP- 264248.000211
		Application Number	18/228,023
Title of Invention	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	18083727	2022-12-19
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
18083727	Claims benefit of provisional	63297901	2022-01-10
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)¹ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country ¹	Filing Date (YYYY-MM-DD)	Access Code ¹ (if applicable)	Remove
Additional Foreign Priority Data may be generated within this form by selecting the Add button.				Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

PGR2026-00032

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	4234-094GIP	264248.000211
		Application Number	18/228,023	
Title of Invention	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS			

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	1234.001CIP- 264248.000211
		Application Number	18/228,023
Title of Invention	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant	1	Remove
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section. Clear		
☒ Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.		Person who shows sufficient proprietary interest
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:		
Name of the Deceased or Legally Incapacitated Inventor:		
If the Applicant is an Organization check here. ☒		
Organization Name	ntone Inc. Sanas.ai Inc.	
Mailing Address Information For Applicant:		
Address 1	228 Park Ave S, Pmb 85454 437 Lytton Avenue	
Address 2	Suite 200	
City	New York - Palo Alto	State/Province NY CA
Country	US	Postal Code 10003- 94301
Phone Number		Fax Number
Email Address		
Additional Applicant Data may be generated within this form by selecting the Add button. Add		

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	4234-001CIP- 264248.000211
		Application Number	18/228,023
Title of Invention	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS		

Assignee 1				
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.				
				Remove
If the Assignee or Non-Applicant Assignee is an Organization check here.				☐
Prefix	Given Name	Middle Name	Family Name	Suffix
Mailing Address Information For Assignee including Non-Applicant Assignee:				
Address 1				
Address 2				
City		State/Province		
Country		Postal Code		
Phone Number		Fax Number		
Email Address				
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.				Add

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). However, if this Application Data Sheet is submitted with the **INITIAL** filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a juristic entity (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Georgiy Khayet/ /Nicholas J. Gallo/		Date (YYYY-MM-DD)	2023-07-31 2025-03-04
First Name	Georgiy	Last Name	Nicholas J. Gallo	Registration Number
				59595 60,758
Additional Signature may be generated within this form by selecting the Add button.				Add

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	~~1234-001CIP~~ <u>264248.000211</u>
	Application Number	<u>18/228,023</u>
Title of Invention	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

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

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

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

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

**REQUEST TO CORRECT OR UPDATE
THE NAME OF THE APPLICANT UNDER
37 CFR 1.46(c)(1), OR CHANGE THE
APPLICANT UNDER 37 CFR 1.46(c)(2)
(FOR USE ONLY IN APPLICATIONS FILED ON OR AFTER
SEPTEMBER 16, 2012)**

Application Number	18/228,023
Filing Date	2023-07-31
First Named Inventor	Andrei Golman
Art Unit	
Examiner Name	
Practitioner Docket Number	264248.000211

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

Applicant hereby requests that the name of the applicant be corrected or updated under 37 CFR 1.46(c)(1), or that the applicant be changed under 37 CFR 1.46(c)(2), in the above-identified application. Requests under 37 CFR 1.46(c)(1) or (c)(2) cannot be submitted after payment of the issue fee or if the application has been patented.

Please check the applicable box(es) below.

☐ 1. This request is to correct or update the name of the applicant (under 37 CFR 1.46(c)(1)) and includes:

☐ An application data sheet (ADS) in accordance with 37 CFR 1.76(c) with the corrected or updated information shown with markings (e.g., underlining for insertions, strikethrough for deletions). A Corrected Web-based ADS may be used.

Note: Requests under 37 CFR 1.46(c)(1) may be filed to correct typographical errors in the name of the § 1.46 applicant, or for updating the name of the § 1.46 applicant (i.e., where there is no change in the applicant itself but just in the applicant's name). See the Manual of Patent Examining Procedure (MPEP) section 605.01.

☒ 2. This request is to change the applicant (under 37 CFR 1.46(c)(2)) and includes:

☒ An application data sheet (ADS) in accordance with 37 CFR 1.76(c) that identifies the changes with proper markings (underlining for insertions and strikethrough for deletions). A Corrected Web-based ADS may be used.

☒ A Statement Under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent). See MPEP 325.

I am the

☐ applicant*

☒ attorney or agent of record
Registration number 60,758

☐ attorney or agent acting under 37 CFR 1.34
Registration number _____

Signature /Nicholas J. Gallo/

Typed or printed name Nicholas J. Gallo

Date March 4, 2025

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

☒ ** Total of 1 forms are submitted.

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0031. Public burden for this form is estimated to average 12 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. If filing this completed form by mail, send to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013). <https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf>

Routine uses of the information in this record may include disclosure to: 1) law enforcement, in the event that the system of records indicates a violation or potential violation of law; 2) a Federal, state, local, or international agency, in response to its request; 3) a contractor of the USPTO having need for the information in order to perform a contract; 4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record; 5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record; 6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations; 7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals; 8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)); 9) the Office of Personnel Management (OPM) for personnel research purposes; and 9) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Additional Uses

Additional USPTO uses of the information in this record may include disclosure to: 1) the International Bureau of the World Intellectual Property Organization, if the record is related to an international application filed under the Patent Cooperation Treaty; 2) the public i) after publication of the application pursuant to 35 U.S.C. 122(b), ii) after issuance of a patent pursuant to 35 U.S.C. 151, iii) if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections, or an issued patent, or iv) without publication of the application or patent under the specific circumstances provided for by 37 CFR 1.14(a)(1)(v)-(vii); and/or 3) the National Archives and Records Administration, for inspection of records.



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
18/228,023

RECEIPT DATE / TIME
03/04/2025 11:22:05 AM Z ET

ATTORNEY DOCKET #
1234.001CIP

Title of Invention

REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 4049

FILED BY Mary Frances Heeks

PATENT CENTER # 69425337

FILING DATE 07/31/2023

CUSTOMER # 85162

FIRST NAMED
INVENTOR Andrei Golman

CORRESPONDENCE
ADDRESS -

AUTHORIZED BY Nicholas Gallo

Documents

TOTAL DOCUMENTS: 4

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
20250304_Request_Correct_ or_Change_Applicant_26424 8_000211.pdf	2	Request under 37CFR1.46(c) to correct, update, change applicant	227 KB
20250304_Revised_ADS_26 4248_000211.pdf	8	Application Data Sheet	1137 KB
Warning: This is not a USPTO supplied ADS fillable form. Data in the form cannot be automatically loaded to other USPTO systems.			
20250304_Statement_Under _37_CFR_3_73_c_264248_0 00211.pdf	3	Assignee showing of ownership per 37 CFR 3.73	108 KB
20250304_POA_and_Trans mittal_264248_000211.pdf	2	Power of Attorney	314 KB

PGR2026-00032

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Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
20250304_Request_Correct_or_Change_Applicant_264248_000211.pdf	26C17D6CE920DD52308F7D2624EF6DD102C63AD76F4130158 DAE1D9D1ED4BBA1EE1C00A484DC7ECB52ADD99C7D8A858 22F8225F34F8EC5D921DA867B7375F799
20250304_Revised_ADS_264248_000211.pdf	E24B1DF7AAF48E2C0858306D6E95E967674DA35504B6087B5 381D72E72A98F6FE331C74046506F2D3D62B2E7FBC910F01D CE3EAEA9B95C297BCA3AB26C238CEF
20250304_Statement_Under_37_CFR_3_73_c_264248_000211.pdf	08AA43E9B92A83801A5D2BCC4709509C99054A929B9D86C43 22070250475FD9D30D844B5D340E45B83073F32A48B2455E52 590A5031E6361A2FA310DBD1D6BE7
20250304_POA_and_Transmittal_264248_000211.pdf	EC464287A09C27E217B9BD4C7EA5C972B3E42D13B861F48B 66561F1627C3B4974111040CBECE9074E3874BED6FE412E0D B2AC0CE8940C13DEAE64EA30229531C

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

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

STATEMENT UNDER 37 CFR 3.73(c)Applicant/Patent Owner: Sanas.ai Inc.Application No./Patent No.: 18/228,023Filed/Issue Date: 07/31/2023Titled: REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALSSanas.ai Inc., a corporation

(Name of Assignee)

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

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

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

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

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

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

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

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

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

1. From: Andrei Golman and Dimitrii Sadykov To: Intone Inc.The document was recorded in the United States Patent and Trademark Office at
Reel 064431, Frame 0284, or for which a copy thereof is attached.2. From: Intone Inc. To: Sanas.ai Inc.The document was recorded in the United States Patent and Trademark Office at
Reel 069979, Frame 0523, or for which a copy thereof is attached.

[Page 1 of 2]

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

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

PGR2026-00032

Krisp Technologies EX1002 Page 91

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

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

4. From: _____ To: _____

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

5. From: _____ To: _____

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

6. From: _____ To: _____

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

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

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

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

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

/Nicholas J. Gallo/

2025-03-04

Signature

Date

Nicholas J. Gallo

60,758

Printed or Typed Name

Title or Registration Number

[Page 2 of 2]

Privacy Act Statement

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

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

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA/82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	18/228,023
Filing Date	07/31/2023
First Named Inventor	Andrei Golman
Title	REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS
Art Unit	
Examiner Name	
Attorney Docket Number	264248.000211

SIGNATURE of Applicant or Patent Practitioner

Signature	/Nicholas J. Gallo/	Date (Optional)	2025-03-04
Name	Nicholas J. Gallo	Registration Number	60,758
Title (if Applicant is a juristic entity)	Attorney for Applicant		
Applicant Name (if Applicant is a juristic entity)	Sanas ai Inc.		

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



*Total of 1 forms are submitted.

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POWER OF ATTORNEY BY APPLICANT

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

Application Number	Filing Date

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

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

11951

OR

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

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

☒ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name

Address

City

State

Zip

Country

Telephone

Email

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

Sanas.ai Inc.

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

SIGNATURE of Applicant for Patent

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

Signature

Date (Optional)

Name

Maxim Serebryakov

Title

Chief Executive Officer

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

☒ Total of 1 forms are submitted.

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

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 3.

PCR2026-00032



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UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
18/228,023	07/31/2023	OPAP	664	264248.000211	20	3

11951

Troutman Pepper Locke LLP (Rochester)
70 Linden Oaks
Suite 210
Rochester, NY 14625

CONFIRMATION NO. 4049
CORRECTED FILING RECEIPT



0000000085766135

Date Mailed: 03/14/2025

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Andrei Golman, San Francisco, CA;
Dmitrii Sadykov, Yerevan, ARMENIA;

Applicant(s)

Sanas.ai Inc., Palo Alto, CA;

Power of Attorney: The patent practitioners associated with Customer Number 11951

Domestic Applications for which benefit is claimed

This application is a CIP of 18/083,727 12/19/2022 PAT 11,715,457
which claims benefit of 63/297,901 01/10/2022

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - **None.**
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

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

If Required, Foreign Filing License Granted: 08/10/2023

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 18/228,023**

Projected Publication Date: Not Applicable.

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

Preliminary Class

704

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

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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

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

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
18/228,023	07/31/2023	Andrei Golman	264248.000211

CONFIRMATION NO. 4049

POA ACCEPTANCE LETTER



OC000000085765996

11951

Troutman Pepper Locke LLP (Rochester)
70 Linden Oaks
Suite 210
Rochester, NY 14625

Date Mailed: 03/18/2025

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/04/2025.

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

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

/snguyen/

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 18/228,023	Filing Date 07/31/2023	☐ To be Mailed
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ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE (\$)	FEE (\$)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	x \$40 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	x \$ 192 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED - PART II

	(Column 1)		(Column 2)	(Column 3)	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT	03/18/2025		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	x \$ 80 = 0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0	x \$ 240 = 0
	☐ Application Size Fee (37 CFR 1.16(s))					
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					
TOTAL ADD'L FEE						0
AMENDMENT			CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	
	Total (37 CFR 1.16(i))	*	Minus	**	=	x \$ 0 =
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x \$ 0 =
	☐ Application Size Fee (37 CFR 1.16(s))					
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					
TOTAL ADD'L FEE						
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.						LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".						/MINNIE A JACKSON/
*** 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.						

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/228,023	03/18/2025 10:58:23 AM Z ET	264248.000211

Title of Invention

REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	4049	FILED BY	Nicholas Gallo
PATENT CENTER #	69624893	AUTHORIZED BY	Nicholas Gallo
CUSTOMER #	11951	FILING DATE	07/31/2023
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Andrei Golman

Payment Information

PAYMENT METHOD DA / 500436	PAYMENT TRANSACTION ID E20253HA59116203	PAYMENT AUTHORIZED BY Nicholas Gallo
PRE-AUTHORIZED ACCOUNT 500436	PRE-AUTHORIZED CATEGORY 37 CFR 1.16 (National application filing, search, and examination fees); 37 CFR 1.17 (Patent application and reexamination processing fees); 37 CFR 1.19 (Document supply fees); 37 CFR 1.21 (Miscellaneous fees and charges)	

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
2201	EACH INDEPENDENT CLAIM IN EXCESS OF THREE	240.00	3	720.00
TOTAL AMOUNT:				\$720.00

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

New Applications Under 35 U.S.C. 111

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

PGR2026-00032

Receipt will establish the filing date of the application

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

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

New International Application Filed with the USPTO as a Receiving Office

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



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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
18/228,023

RECEIPT DATE / TIME
03/18/2025 10:58:23 AM Z ET

ATTORNEY DOCKET #
264248.000211

Title of Invention

REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	4049	FILED BY	Nicholas Gallo
PATENT CENTER #	69624893	FILING DATE	07/31/2023
CUSTOMER #	11951	FIRST NAMED INVENTOR	Andrei Golman
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Nicholas Gallo

Documents

TOTAL DOCUMENTS: 3

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
Preliminary Amendment_264248.000211_309460787.1.pdf	9	-	136 KB
Preliminary Amendment_264248.000211_309460787.1-A.PE.pdf	(1-1) 1	Preliminary Amendment	109 KB
Preliminary Amendment_264248.000211_309460787.1-CLM.pdf	(2-8) 7	Claims	126 KB
Preliminary Amendment_264248.000211_309460787.1-REM.pdf	(9-9) 1	Applicant Arguments/Remarks Made in an Amendment	108 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
Preliminary Amendment_264248.000211_3 09460787.1.pdf	2878DED53EB49FDECC1BCD8ABBCC2EC8B74168FBAC12D8 F1502874921ED1D3C7BEF61E9C138EFEEB719404D3C53A58 E6E9832B11F59C2F123C59674DC094775F
Preliminary Amendment_264248.000211_3 09460787.1-A.PE.pdf	3BB15CD8ACE58C7601423FA8A59DCB54BA95520114BCC944 2E3B1CE49758061CB75C8434F5286144C0F232D0EDCB16559 97F10D132B00B7FD376169CF72BBEF4
Preliminary Amendment_264248.000211_3 09460787.1-CLM.pdf	04EE0F66A4A762FF7E4C9F698767EF622E9F73184A023BECA 31D8BBE25637694523CAD1E5B8EDD360E7C4166079C61A57 C9BD5C51246433B9297E6DD299888F5
Preliminary Amendment_264248.000211_3 09460787.1-REM.pdf	79F70596159A8E75ED3BD593F11A71584ECE36B6F519A74EE CE53F23A4F62B32CDE68E360B6BFC22C59B7D5BB01B8F817 99390CF0BD119CDDC0566CA897BD1EC

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New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors	: Andrei Golman et al.	)	
		)	
Applicant	: Sanas.ai Inc.	)	Examiner:
		)	To be assigned
		)	
Serial No.	: 18/228,023	)	Art Unit:
		)	To be assigned
Cnfrm. No.	: 4049	)	
		)	
Filed	: July 31, 2023	)	
		)	
For	: REAL TIME CORRECTION OF ACCENT IN	)	
	SPEECH AUDIO SIGNALS	)	

PRELIMINARY AMENDMENT

Mail Stop Amendment

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

Please amend the above-identified patent application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 9 of this paper.

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for real-time accent correction ~~of an accent in an input audio signal~~, the method ~~being~~ implemented by a computing system, ~~the method~~ and comprising:
extracting, ~~acoustic features~~ from a chunk of a stream of chunks of ~~[[the]]~~ an input audio signal, ~~[[by an]] acoustic features extraction module of a computational graph;~~ and extracting linguistic features ~~[[with]]~~, wherein the linguistic features have a reduced accent from the chunk ~~by a linguistic features extraction module of the computational graph;~~
synthesizing, ~~by a synthesis module of the computational graph;~~ a spectrum representation based on the acoustic features, the linguistic features, and a speaker embedding for a human speaker; and
generating, by a vocoder ~~of the computational graph~~ and based on the spectrum representation, an output chunk of an output audio signal.
2. (Canceled)
3. (Currently Amended) The method ~~for real-time correction~~ of claim 1, wherein:
the spectrum representation includes a melspectrogram with the reduced accent; and
the acoustic features include one or more of ~~the following~~: a pitch of the input audio signal, a standard deviation of the pitch of the input audio signal, a mean of the pitch of the input audio signal, an energy of the input audio signal, a noise floor of the input audio signal, Linear Prediction Cepstral Coefficients (LPCC) of the input audio signal, Mel Frequency Cepstral Coefficients (MFCC) of the input audio signal, ~~[[and]]~~ or Bark Frequency Cepstral coefficients (BFCC) of the input audio signal.
4. (Currently Amended) The method ~~for real-time correction~~ of claim 1, wherein:
the input audio signal is digitized with a first sample rate; and

the output audio signal is digitized with a second sample rate different from the first sample rate.

5-6. (Canceled)

7. (Currently Amended) The method ~~for real-time correction~~ of claim 1, further comprising processing, in parallel via wherein the computing system includes at least two processing units of the computing system, two or more of the extracting the acoustic features, extracting the linguistic features, synthesizing the spectrum representation, or generating the output chunk and at least two modules from the computational graph are processed in parallel using the at least two processing units.

8. (Currently Amended) The method ~~for real-time correction~~ of claim 1, further comprising: extracting the acoustic features, extracting the linguistic features, synthesizing the spectrum representation, and generating the output chunk using respective modules of a computational graph, wherein each of the respective modules is associated with input data and output data; and

providing, as an input to at least one of the modules in the computational graph, a time-shift parameter indicating a difference in timestamps of the chunk of [[a]] the stream of chunks of the input audio signal and one of the following: input data [[and]] or the output data of the at least one of the respective modules, wherein the acoustic features are assigned a lower time-shift parameter than the linguistic features.

9-10. (Canceled)

11. (Currently Amended) A ~~computing system for real-time correction of an accent in an input audio signal, the system~~ comprising an input device, a vocoder, memory comprising instructions stored thereon, and one or more processors coupled to the memory and configured to execute the stored instructions to a computational graph including acoustic features extraction modules, a linguistic features extraction module, a synthesis module, and a vocoder, wherein:

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~~the acoustic features extraction modules are configured to extract, from a chunk of a stream of chunks of [[the]] an input audio signal obtained via the input device, acoustic features and linguistic features, wherein the linguistic features have a reduced accent;~~

~~the linguistic features extraction module is configured to extract, from the chunk, linguistic features with a reduced accent;~~

~~the synthesis module is configured to synthesize a spectrum representation based on the acoustic features, the linguistic features, and a speaker embedding for a human speaker; and~~

~~the vocoder is configured to generate, via the vocoder and based on the spectrum representation, an output chunk of an output audio signal.~~

12. (Canceled)

13. (Currently Amended) The computing system for real-time correction of claim 11, wherein:

the spectrum representation includes a melspectrogram with the reduced accent; and
the acoustic features include one or more of ~~the following~~: a pitch of the input audio signal, a standard deviation of the pitch of the input audio signal, a mean of the pitch of the input audio signal, an energy of the input audio signal, a noise floor of the input audio signal, Linear Prediction Cepstral Coefficients (LPCC) of the input audio signal, Mel Frequency Cepstral Coefficients (MFCC) of the input audio signal, [[and]] or Bark Frequency Cepstral coefficients (BFCC) of the input audio signal.

14. (Currently Amended) The computing system for real-time correction of claim 11, wherein:

the input audio signal is digitized with a first sample rate; and
the output audio signal is digitized with a second sample rate different from the first sample rate.

15-16. (Canceled)

17. (Currently Amended) The computing system for real-time correction of claim 11, wherein the processors are further configured to execute the stored instructions to process, in parallel, two or more of the extracting the acoustic features, extracting the linguistic features, synthesizing the spectrum representation, or generating the output chunk ~~at least two modules from the computational graph are configured to process data in parallel.~~

18. (Currently Amended) The computing system for real-time correction of claim 11, wherein the processors are further configured to execute the stored instructions to:
extract the acoustic features, extract the linguistic features, synthesize the spectrum representation, and generate the output chunk using respective modules of a computational graph, wherein each of the respective modules is associated with input data and output data; and
provide, as an input to at least one of the respective modules ~~in the computational graph~~ includes, a time-shift parameter indicating a difference in timestamps of the chunk of [[a]] the stream of chunks of the input audio signal and one of the following: input data or the output data of the at least one of the respective modules, wherein the acoustic features are assigned a lower time-shift parameter than the linguistic features.

19. (Canceled)

20. (Currently Amended) A non-transitory computer-readable storage medium comprising instructions stored thereon that, when executed by one or more processors, cause the processors; ~~the computer-readable storage medium including instructions that, when executed by a computer, cause the computer to:~~

extract, by an acoustic features extraction module of a computational graph, acoustic features from a chunk of a stream of chunks of an input audio signal, linguistic features and acoustic features, wherein the linguistic features have a reduced accent;

extract, by a linguistic features extraction module of the computational graph, and from the chunk, linguistic features with a reduced accent;

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synthesize, ~~by a synthesis module of the computational graph~~, a spectrum representation based on the acoustic features, the linguistic features, and a speaker embedding for a human speaker; [[and]]

generate, by a vocoder ~~of the computational graph~~ and based on the spectrum representation, an output chunk of an output audio signal; and
provide the output audio signal for output via an auditory channel of an output device.

21. (New) The non-transitory computer-readable storage medium of claim 20, wherein:
the spectrum representation includes a melspectrogram with the reduced accent; and
the acoustic features include one or more of a pitch of the input audio signal, a standard deviation of the pitch of the input audio signal, a mean of the pitch of the input audio signal, an energy of the input audio signal, a noise floor of the input audio signal, Linear Prediction Cepstral Coefficients (LPCC) of the input audio signal, Mel Frequency Cepstral Coefficients (MFCC) of the input audio signal, or Bark Frequency Cepstral coefficients (BFCC) of the input audio signal.

22. (New) The non-transitory computer-readable storage medium of claim 20, wherein:
the input audio signal is digitized with a first sample rate; and
the output audio signal is digitized with a second sample rate different from the first sample rate.

23. (New) The non-transitory computer-readable storage medium of claim 20, wherein the instructions, when executed by the processors, further cause the processors to process, in parallel, two or more of the extracting the acoustic features, extracting the linguistic features, synthesizing the spectrum representation, or generating the output chunk.

24. (New) The non-transitory computer-readable storage medium of claim 20, wherein the instructions, when executed by the processors, further cause the processors to:

extract the acoustic features, extract the linguistic features, synthesize the spectrum representation, and generate the output chunk using respective modules of a computational graph, wherein each of the respective modules is associated with input data and output data; and provide, as an input to at least one of the respective modules, a time-shift parameter indicating a difference in timestamps of the chunk of the stream of chunks of the input audio signal and one of the input data or the output data of the at least one of the respective modules, wherein the acoustic features are assigned a lower time-shift parameter than the linguistic features.

25. (New) A method for real-time accent correction, the method implemented by a computing system and comprising:

dividing a speech audio signal into a stream of input chunks, an input chunk from the stream of input chunks including a pre-defined number of frames of the speech audio signal;

extracting, from the input chunk and a context associated with the input chunk, acoustic features and linguistic features, wherein the linguistic features have a reduced accent;

obtaining a speaker embedding for a human speaker; and

generating an output chunk of an output audio signal based on the speaker embedding, the acoustic features, and the linguistic features.

26. (New) A computing system, comprising memory comprising instructions stored thereon, and one or more processors coupled to the memory and configured to execute the stored instructions to:

divide a speech audio signal into a stream of input chunks, an input chunk from the stream of input chunks including a pre-defined number of frames of the speech audio signal;

extract, from the input chunk and a context associated with the input chunk, acoustic features and linguistic features, wherein the linguistic features have a reduced accent;

obtain a speaker embedding for a human speaker; and

generate an output chunk of an output audio signal based on the speaker embedding, the acoustic features, and the linguistic features.

27. (New) A non-transitory computer-readable storage medium comprising instructions stored thereon that, when executed by one or more processors, cause the processors to:

- divide a speech audio signal into a stream of input chunks, an input chunk from the stream of input chunks including a pre-defined number of frames of the speech audio signal;
- extract, from the input chunk and a context associated with the input chunk, acoustic features and linguistic features, wherein the linguistic features have a reduced accent;
- obtain a speaker embedding for a human speaker; and
- generate an output chunk of an output audio signal based on the speaker embedding, the acoustic features, and the linguistic features.

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REMARKS

Applicant has canceled, without prejudice, claims 2, 5-6, 9-10, 12, 15-16, and 19, amended claims 1, 3-4, 7-8, 11, 13-14, 17-18, and 20, and added new claims 21-27, as set forth above. No new matter has been added by way of these amendments. Applicant submits that this case is in condition for allowance and such allowance is earnestly solicited.

Respectfully submitted,

Date: March 18, 2025

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Facsimile: 800.541.9525

<i>Notice of References Cited</i>	Application/Control No. 18/228,023		Applicant(s)/Patent Under Reexamination Golman et al.	
	Examiner VU B HANG		Art Unit 2654	Page 1 of 1

U.S. PATENT DOCUMENTS						
*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Name	CPC Classification	US Classification
*	A	US-11715457-B1	2023-08-01	Golman; Andrei	G10L13/04	704/240
*	B	US-20040207466-A1	2004-10-21	Anderson, Jack B.	H03F3/2175	330/10
*	C	US-11150866-B2	2021-10-19	Rand; James	G10L15/08	1/1
	D					
	E					
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FOREIGN PATENT DOCUMENTS					
*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Country	CPC Classification
	N				
	O				
	P				
	Q				
	R				
	S				
	T				

NON-PATENT DOCUMENTS		
*		Include as applicable: Author, Title, Date, Publisher, Edition or Volume, Pertinent Pages
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	V	
	W	
	X	

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

<i>Search Notes</i> 	Application/Control No. 18/228,023	Applicant(s)/Patent Under Reexamination Golman et al.
	Examiner VU B HANG	Art Unit 2654

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner
G10L 15/16, 25/27, 25/30, 15/12, 19/005, 19/00, 19/02, 19/08, 25/90, 13/02, 13/04, 13/06, 21/003, 25/00, 25/75, 13/07, 13/033, 13/08, 13/10	05/17/2025	VH

US Classification - Searched*			
Class	Subclass	Date	Examiner

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

Search Notes		
Search Notes	Date	Examiner
PE2E Search, Limited Text Search	05/17/2025	VH

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

/VU B HANG/ Primary Examiner, Art Unit 2654	
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<i>Index of Claims</i> 	Application/Control No. 18/228,023	Applicant(s)/Patent Under Reexamination Golman et al.
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✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM			DATE							
Final	Original	05/17/2025								
	1	✓								
	2	-								
	3	✓								
	4	✓								
	5	-								
	6	-								
	7	✓								
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	25	✓								
	26	✓								
	27	✓								

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	2013	(audio SAME stream SAME chunk\$1 SAME frame\$1)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:06 PM
L2	9	(audio SAME stream SAME chunk\$1 SAME extract\$3 SAME (acoustic ADJ feature\$1))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:07 PM
L3	25	(audio SAME chunk\$1 SAME extract\$3 SAME (acoustic ADJ feature\$1))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:07 PM
L4	9	(audio SAME chunk\$1 SAME extract\$3 SAME (acoustic ADJ	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY,	OR	ON	ON	2025/05/16 06:08 PM

L5	2461	feature\$1) SAME (linguistic ADJ feature\$1))	CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:35 PM
L6	512	((accent near4 (enhancement OR enhancing OR modification OR modify\$3 OR correct\$3))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:36 PM
L7	4	((accent near4 (enhancement OR enhancing OR modification OR modify\$3 OR correct\$3)) SAME (synthesiz\$3 OR synthesis))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:37 PM
		((accent near4 (enhancement OR enhancing OR modification OR modify\$3 OR correct\$3)) SAME (synthesiz\$3 OR synthesis) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (vocoder OR output))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK,	OR	ON	ON	2025/05/16 06:37 PM

L8	4	((accent near4 (enhancement OR enhancing OR modification OR modify\$3 OR correct\$3)) SAME (synthesiz\$3 OR synthesis) SAME ((spectrum ADJ representation) OR melspectrogram))	TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:38 PM
L9	4	((accent near4 (enhancement OR enhancing OR modification OR modify\$3 OR correct\$3)) SAME ((spectrum ADJ representation) OR melspectrogram))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:38 PM
L10	43	((accent OR voice) SAME (enhancement OR enhancing OR modification OR modify\$3 OR correct\$3) SAME ((spectrum ADJ representation) OR melspectrogram))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:39 PM
L11	5	((accent OR voice) SAME (enhancement OR enhancing OR modification OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU,	OR	ON	ON	2025/05/16 06:39 PM

		modify\$3 OR correct\$3) SAME ((spectrum ADJ representation) OR melspectrogram) SAME acoustic SAME linguistic)	CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L12	4	((accent OR voice) SAME (enhancement OR enhancing OR modification OR modify\$3 OR correct\$3) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:40 PM
L13	2947	(G10L ADJ 15/16)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:02 PM
L14	339	(G10L ADJ 25/27)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:02 PM

L15	1422	(G10L ADJ 25/30)	VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:02 PM
L16	1201	(G10L ADJ 19/005)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:02 PM
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L21	1354	(G10L ADJ 15/07)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:02 PM

L22	2904	(G10L ADJ 15/20)	JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:03 PM
L23	638	(G10L ADJ 25/87)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:03 PM
L24	2824	(G10L ADJ 25/78)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:03 PM
L25	3225	(G10L ADJ 15/1822)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB,	OR	ON	ON	2025/05/16 11:03 PM

L26	2009	(G10L ADJ 15/183)	HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:03 PM
L27	663	(G10L ADJ 15/193)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:03 PM
L28	1084	(G10L ADJ 15/19)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:03 PM

L29	1369	(G10L ADJ 19/02)	IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:04 PM
L30	966	(G10L ADJ 19/0204)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:04 PM
L31	313	(G10L ADJ 19/035)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:04 PM
L32	717	(G10L ADJ 19/0212)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS,	OR	ON	ON	2025/05/16 11:04 PM

L33	194	(G10L ADJ 19/083)	IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:04 PM
L34	1171	(G10L ADJ 21/038)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:04 PM
L35	411	(G10L ADJ 19/08)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:05 PM

L36	203	(G10L ADJ 19/09)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:05 PM
L37	751	(G10L ADJ 21/04)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:05 PM
L38	813	(G10L ADJ 25/90)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:05 PM
L39	0	(G10L ADJ 2025/06)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO,	OR	ON	ON	2025/05/16 11:05 PM

L40	37	(G10L ADJ 2025/932)	MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:05 PM
L41	38	(G10L ADJ 2025/935)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:06 PM
L42	40	(G10L ADJ 2025/906)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:06 PM
L43	513	(G10L ADJ 25/93)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16

			USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				11:06 PM
L44	625	(G10L ADJ 19/04)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:06 PM
L45	267	(G10L ADJ 19/07)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:06 PM
L46	649	(G10L ADJ 19/06)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO,	OR	ON	ON	2025/05/16 11:06 PM

L47	411	(G10L ADJ 19/08)	NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:07 PM
L48	194	(G10L ADJ 19/083)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:07 PM
L49	64	(G10L ADJ 19/087)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:07 PM
L50	590	(G10L ADJ 19/12)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP,	OR	ON	ON	2025/05/16 11:07 PM

L51	341	(G10L ADJ 19/0018)	AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:07 PM
L52	79	(G10L ADJ 25/75)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:08 PM
L53	458	(G10L ADJ 21/003)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:08 PM

L54	559	(G10L ADJ 25/00)	RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:08 PM
L55	1007	(G10L ADJ 13/02)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:08 PM
L56	745	(G10L ADJ 13/04)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:08 PM
L57	482	(G10L ADJ 13/06)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY,	OR	ON	ON	2025/05/16 11:08 PM

L58	337	(G10L ADJ 13/07)	CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:08 PM
L59	1928	(G10L ADJ 13/08)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:09 PM
L60	731	(G10L ADJ 13/10)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:09 PM

L61	1371	(G10L ADJ 13/033)	TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:09 PM
L62	30590	(L13 OR L14 OR L15 OR L16 OR L17 OR L18 OR L19 OR L20 OR L21 OR L22 OR L23 OR L24 OR L25 OR L26 OR L27 OR L28 OR L29 OR L30 OR L31 OR L32 OR L33 OR L34 OR L35 OR L36 OR L37 OR L38 OR L39 OR L40 OR L41 OR L42 OR L43 OR L44 OR L45 OR L46 OR L47 OR L48 OR L49 OR L50 OR L51 OR L52 OR L53 OR L54 OR L55 OR L56 OR L57 OR L58 OR L59 OR L60 OR L61)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:12 PM
L63	0	L62 AND ((audio near3 (input OR stream)) SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:18 PM

L64	0	vocoder SAME (output near3 (audio OR chunk))) L62 AND (audio SAME (input OR stream) SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME vocoder SAME (output near3 (audio OR chunk)))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:19 PM
L65	0	L62 AND (audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME vocoder SAME (output near3 (audio OR chunk)))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:19 PM
L66	0	L62 AND (audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME (vocoder OR (output	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:19 PM

L67	0	near3 (audio OR chunk)))) L62 AND (audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME vocoder)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:20 PM
L68	0	L62 AND (audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:20 PM
L69	0	L62 AND (audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:20 PM
L70	0	L62 AND (audio SAME (chunk\$1 OR frame\$1) SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB,	OR	ON	ON	2025/05/16 11:20 PM

		feature\$1) OR phoneme OR posterior) SAME accent SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L71	0	L62 AND (audio SAME (chunk\$1 OR frame\$1) SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:20 PM
L72	0	L62 AND ((accent near4 (correct\$3 OR enhancement OR modification OR modify\$3)) SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:21 PM
L73	0	L62 AND (accent SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT;	OR	ON	ON	2025/05/16 11:22 PM

L74	0	L62 AND (((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:22 PM
L75	0	((audio near3 (input OR stream)) SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME vocoder SAME (output near3 (audio OR chunk)))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:22 PM
L76	0	(audio SAME (input OR stream) SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME vocoder SAME (output near3 (audio OR chunk)))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:22 PM
L77	0	(audio SAME (chunk\$1	(US-PGPUB; USPAT;	OR	ON	ON	2025/05/16

		OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME vocoder SAME (output near3 (audio OR chunk)))	USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				11:22 PM
L78	0	(audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME (vocoder OR (output near3 (audio OR chunk))))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:22 PM
L79	0	(audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME vocoder)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:23 PM
L80	0	(audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB,	OR	ON	ON	2025/05/16 11:23 PM

		feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L81	0	(audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:23 PM
L82	0	(audio SAME (chunk\$1 OR frame\$1) SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:23 PM
L83	0	(audio SAME (chunk\$1 OR frame\$1) SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT;	OR	ON	ON	2025/05/16 11:23 PM

L84	0	((accent near4 (correct\$3 OR enhancement OR modification OR modify\$3)) SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:23 PM
L85	0	(accent SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:24 PM
L86	0	((((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:24 PM
L87	0	L62 AND (audio SAME stream SAME chunk\$1 SAME extract\$3 SAME (acoustic ADJ feature\$1))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS,	OR	ON	ON	2025/05/16 11:24 PM

			IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L88	0	L62 AND (audio SAME chunk\$1 SAME extract\$3 SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:24 PM
L89	1	L62 AND (audio SAME chunk\$1 SAME extract\$3 SAME (acoustic ADJ feature\$1))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:24 PM
L90	0	L62 AND ((accent OR voice) SAME (enhancement OR enhancing OR modification OR modify\$3 OR correct\$3) SAME ((spectrum ADJ representation) OR melspectrogram))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:25 PM

L91	0	L62 AND (((acoustic ADJ feature\$1) OR pitch) SAME ((liguistic ADJ feature\$1) OR phoneme) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:27 PM
L92	0	(((acoustic ADJ feature\$1) OR pitch) SAME ((liguistic ADJ feature\$1) OR phoneme) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:28 PM
L93	0	L62 AND ((voice OR accent) SAME (correct\$3 OR enhacement) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:29 PM
L94	0	L62 AND ((voice OR accent) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL,	OR	ON	ON	2025/05/16 11:29 PM

L95	5	((voice OR accent) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:29 PM
L96	4	((voice OR accent) SAME (correct\$3 OR enhanc\$4) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:29 PM
L97	0	L62 AND ((voice OR accent) SAME (feature near4 extract\$3) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:30 PM
L98	0	L62 AND ((voice OR	(US-PGPUB; USPAT;	OR	ON	ON	2025/05/16

		accent) SAME feature SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				11:30 PM
L99	0	L62 AND ((voice OR accent) SAME acoustic SAME linguistic SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:30 PM
L100	0	L62 AND ((voice OR accent) SAME (acoustic OR pitch) SAME (linguistic OR phoneme) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:31 PM
L101	4	((voice OR accent) SAME (feature near4 extract\$3) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL,	OR	ON	ON	2025/05/16 11:31 PM

L102	5	((voice OR accent) SAME feature SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:31 PM
L103	4	((voice OR accent) SAME acoustic SAME linguistic SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:31 PM
L104	4	((voice OR accent) SAME (acoustic OR pitch) SAME (linguistic OR phoneme) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:31 PM
L105	1	L62 AND (input SAME (first ADJ sample ADJ	(US-PGPUB; USPAT; USOCR; FIT (AP, AT,	OR	ON	ON	2025/05/17 06:58 PM

		rate) SAME output SAME (second ADJ sample ADJ rate))	AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L106	2	L62 AND (audio SAME (first ADJ sample ADJ rate) SAME output SAME (second ADJ sample ADJ rate))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/17 06:58 PM
L107	97	(audio SAME input SAME (first ADJ sample ADJ rate) SAME output SAME (second ADJ sample ADJ rate))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/17 06:58 PM
L108	4452	L62 AND (parallel near3 process\$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE,	OR	ON	ON	2025/05/17 07:22 PM

L109	11	L62 AND ((parallel near3 process\$3) SAME (extract\$3 near4 feature\$1) SAME (synthesiz\$3 OR output))	SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/17 07:23 PM
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PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/228,023	07/31/2023	Andrei Golman	264248.000211	4049
11951	7590	05/21/2025	EXAMINER	
Troutman Pepper Locke LLP (Rochester)			HANG, VU B	
70 Linden Oaks			ART UNIT	
Suite 210			PAPER NUMBER	
Rochester, NY 14625			2654	
			NOTIFICATION DATE	
			DELIVERY MODE	
			05/21/2025	
			ELECTRONIC	

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

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

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

Patents@troutman.com

Notice of Pre-AIA or AIA Status

- The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.
- Claims 1, 3-4, 7-8, 13-14, 17-18 and 20-27 are pending.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP § 2146 *et seq.* for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The filing of a terminal disclaimer by itself is not a complete reply to a nonstatutory double patenting (NSDP) rejection. A complete reply requires that the terminal disclaimer be accompanied by a reply requesting reconsideration of the prior Office action. Even where the NSDP rejection is provisional the reply must be complete. See MPEP § 804, subsection I.B.1. For a reply to a non-final Office action, see 37 CFR 1.111(a). For a reply to final Office action, see 37 CFR 1.113(c). A request for reconsideration while not provided for in 37 CFR 1.113(c) may be filed after final for consideration. See MPEP §§ 706.07(e) and 714.13.

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The actual filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/apply/applying-online/eterminal-disclaimer.

Claims 1, 3, 8, 11, 13, 18, 20-21 and 24-27 are rejected on the ground of non-statutory double patenting as being unpatentable over Claims 1, 2, 7 and 9 of U.S. Patent No. 11,715,457. Although the claims at issue are not identical, they are not patentably distinct from each other.

A comparison of the claims from the current application and U.S. Patent No. 11,715,457 is shown below.

Current Application	U.S. Patent No. 11,715,457
1. A method for real-time accent correction, the method implemented by a computing system, and comprising: extracting, from a chunk of a stream of chunks of an input audio signal, acoustic features and linguistic features, wherein	1. A method for real-time correction of an accent in a speech audio signal, the method being implemented by a computing device and comprising: dividing the speech audio signal into a stream of input chunks, an input chunk from the stream of input chunks

the linguistic features have a reduced accent; synthesizing a spectrum representation based on the acoustic features, the linguistic features and a speaker embedding for a human speaker; and generating, by a vocoder and based on the spectrum representation, an output chunk of an output audio signal.	including a pre-defined number of frames of the speech audio signal; extracting, by an acoustic features extraction module from the input chunk and a context associated with the input chunk, acoustic features; extracting, by a linguistic features extraction module from the input chunk and the context, linguistic features with a reduced accent; receiving a speaker embedding for a human speaker; and generating an output chunk of an output audio signal based on the speaker embedding, the acoustic features, and the linguistic features.
25. A method for real-time accent correction, the method implemented by a computing system and comprising: dividing a speech audio signal into a stream of input chunks, an input chunk from the stream of input chunks including a pre-defined number of frames of the speech audio signal; extracting, from the input chunk and a context associated with the input chunk, acoustic features and linguistic features, wherein the linguistic features have a reduced accent; obtaining a speaker embedding for a human speaker; and generating an output chunk of an output audio signal based on the speaker embedding, the acoustic features, and the linguistic features.	2. A method for real-time correction of an accent in a speech audio signal, the method being implemented by a computing device and comprising: dividing the speech audio signal into a stream of input chunks, an input chunk from the stream of input chunks including a pre-defined number of frames of the speech audio signal; extracting, by an acoustic features extraction module from the input chunk and a context associated with the input chunk, acoustic features; extracting, by a linguistic features extraction module from the input chunk and the context, linguistic features with a reduced accent; receiving a speaker embedding for a human speaker;

	and generating an output chunk of an output audio signal based on the speaker embedding, the acoustic features, and the linguistic features.
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Regarding **Claim 1**, Claim 1 of U.S. Patent No. 11,715,457 is similar to Claim 1 of the current application, and includes all of the limitations of Claim 1 of the current application. Claim 1 of U.S. Patent No. 11,715,457 includes the additional extraction modules for extracting the features, and divides the input audio stream into a predefined number of frames. Therefore, it is obvious that the claims are not patentably distinct from one another.

Regarding **Claim 3**, Claims 7 and 9 of U.S. Patent No. 11,715,457 include the limitations of Claim 3 of the current application.

Regarding **Claim 8**, Claims 1 and 2 of U.S. Patent No. 11,715,457 include similar limitations to the limitations of Claim 3 of the current application.

Regarding **Claims 11 and 20**, the rationale provided for the rejection of Claim 1 is incorporated herein.

Regarding **Claims 13 and 21**, the rationale provided for the rejection of Claim 3 is incorporated herein.

Regarding **Claims 18 and 24**, the rationale provided for the rejection of Claim 8 is incorporated herein.

Regarding **Claim 25**, Claim 1 of U.S. Patent No. 11,715,457 is similar to Claim 25 of the current application, and includes all of the limitations of Claim 25 of the current application. Claim 1 of U.S. Patent No. 11,715,457 includes the additional extraction modules for extracting the features. Therefore, it is obvious that the claims are not patentably distinct from one another.

Regarding **Claims 26 and 27**, the rationale provided for the rejection of Claim 25 is incorporated herein.

Claims 4, 14 and 22 are rejected on the ground of non-statutory double patenting as being unpatentable over Claim 1 of U.S. Patent No. 11,715,457 in view of Anderson et al. (US Pub. 2004/0207466 A1).

Regarding **Claim 4**, Claim 1 of U.S. Patent No. 11,715,457 includes all of the limitations of Claim 1 of the current application but does not include the limitation “wherein the input audio signal is digitized with a first sample rate; and the output audio signal is digitized with a second sample rate different from the first sample rate.

Anderson, however, teaches digitizing an input data stream to a first sample rate and digitizing an output data stream to a second sample rate depending on the data source and a predetermined set of sample rates for the input devices and output devices (see paragraph [0030]).

It would have been obvious for one skilled in the art, before the effective filing date of the application, to include to Claim 1 of U.S. Patent No. 11,715,457 the limitation for digitizing an input data stream to a first sample rate and digitizing an output data stream to a second sample rate different from the first sample rate. The motivation would be to digitize the input and output audio streams based on a predetermined set of sample rates for the input devices and output devices.

Regarding **Claims 14 and 22**, the rationale provided for the rejection of Claim 4 is incorporated herein.

Claims 7, 17 and 23 are rejected on the ground of non-statutory double patenting as being unpatentable over Claim 1 of U.S. Patent No. 11,715,457 in view of Rand et al. (US Patent 11,150,866 B2).

Regarding **Claim 7**, Claim 1 of U.S. Patent No. 11,715,457 includes all of the limitations of Claim 1 of the current application but does not include the limitation “processing, in parallel via at least two

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processing units of the computing system, two or more of the extracting the acoustic features, extracting the linguistic features, synthesizing the spectrum representation or generation of output chunk.

Rand, however, teaches performing relevant feature extraction on the audio signal and an additional processing, including routing the extracted features for output processing in parallel (see Col.12, Line 27-31).

It would have been obvious for one skilled in the art, before the effective filing date of the application, to include to Claim 1 of U.S. Patent No. 11,715,457 the limitation for feature extraction and generation of output chunk in parallel via at least two processing units of the computing system. The motivation would be to process and output the audio data in real-time.

Regarding **Claims 17 and 23**, the rationale provided for the rejection of Claim 7 is incorporated herein.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VU B HANG whose telephone number is (571)272-0582.

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

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hai Phan, can be reached at (571)272-6338. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Art Unit: 2654

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/VU B HANG/

Primary Examiner, Art Unit 2654



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TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A PRIOR PATENT

APPLICATION # 18228023	FILING DATE 07/31/2023	FIRST NAMED INVENTOR Andrei Golman	ATTORNEY DOCKET # 264248.000211
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Title of Invention

REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS



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Owner	Percent interest
Sanas.ai Inc.	100%
Total	100%

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Application #	Filing Date
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as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and any patent granted on the reference application are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term of any patent granted on said reference application, "as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application," in the event that any such patent granted on the pending reference application: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as shortened by any terminal disclaimer filed prior to its grant.

The owner(s) of percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)

Patent #

11715457

as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:

- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.



Terminal disclaimer fee under 37 CFR 1.20(d) included with Electronic Terminal Disclaimer request.

Applicant claims the following entity status:

Small

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.

I certify, in accordance with 37 CFR 1.4(d)(4) that I am: An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application

Signature	Name	Registration #
/Nicholas J. Gallo/	Nicholas Gallo	60758

* Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner). Form PTO/SB/96 may be used for making this certification. See MPEP 324.



**UNITED STATES
PATENT AND TRADEMARK OFFICE**

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

APPROVAL LETTER

**APPLICATION #
18/228,023**

**FILING DATE
07/31/2023**

**APPLICANT/PATENT UNDER REEXAMINATION
Andrei Golman**

Title of Invention

REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

Electronic terminal disclaimer filed on 06/06/2025



Approved

This patent is subject to a Terminal Disclaimer

Approved / Disapproved by: Electronic Terminal Disclaimer automatically approved



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
18/228,023

RECEIPT DATE / TIME
06/06/2025 05:54:16 PM Z ET

ATTORNEY DOCKET #
264248.000211

Title of Invention

REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	4049	FILED BY	Nicholas Gallo
PATENT CENTER #	70774193	FILING DATE	07/31/2023
CUSTOMER #	11951	FIRST NAMED INVENTOR	Andrei Golman
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
petition-request.pdf	3	Terminal Disclaimer-Filed (Electronic)	44 KB
grantLetter.pdf	1	Terminal Disclaimer-Electronic-Approved	18 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
petition-request.pdf	304BCB2D8DCEB0EA3F611D1BB42FC021E61B5B58BC42B57 AF016D2E51E8EF8D71207EC9AD8D5DE787E219858176778D4 C34DB41FC2235FDA12907121D31BB2A6
grantLetter.pdf	05F47135D93A9B8DA72950B8990CA69E663E242562DD370DB

PGR2026-00032

Krisp Technologies EX1002 Page 162

4C7F6AA1BB7B42F54921A758FAE7C83998A3C0236F384000F
D24C83CD48183673C73592BF0F4EE8

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC PAYMENT RECEIPT

APPLICATION #
18/228,023

RECEIPT DATE / TIME
06/06/2025 05:54:16 PM Z ET

ATTORNEY DOCKET #
264248.000211

Title of Invention

REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 4049

FILED BY Nicholas Gallo

PATENT CENTER # 70774193

AUTHORIZED BY -

CUSTOMER # 11951

FILING DATE 07/31/2023

CORRESPONDENCE ADDRESS -

FIRST NAMED INVENTOR Andrei Golman

Payment Information

PAYMENT METHOD
DA / 500436

PAYMENT TRANSACTION ID
E202566H54375738

PAYMENT AUTHORIZED BY
Nicholas Gallo

PRE-AUTHORIZED ACCOUNT
500436

PRE-AUTHORIZED CATEGORY
37 CFR 1.16 (National application filing, search, and examination fees); 37 CFR 1.17 (Patent application and reexamination processing fees); 37 CFR 1.19 (Document supply fees); 37 CFR 1.21 (Miscellaneous fees and charges)

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
2814	STATUTORY DISCLAIMER, INCLUDING TERMINAL DISCLAIMER	183.00	1	183.00
TOTAL AMOUNT:				\$183.00

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

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d))

PGR2026-00032

Krisp Technologies EX1002 Page 164

and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

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

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

New International Application Filed with the USPTO as a Receiving Office

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



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
18/228,023

RECEIPT DATE / TIME
06/09/2025 10:13:47 AM Z ET

ATTORNEY DOCKET #
264248.000211

Title of Invention

REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	4049	FILED BY	Nicholas Gallo
PATENT CENTER #	70789324	FILING DATE	07/31/2023
CUSTOMER #	11951	FIRST NAMED INVENTOR	Andrei Golman
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Nicholas Gallo

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2025-05-21 NFOA response 264248.000211_315987729. 1_.pdf	2	-	94 KB
2025-05-21 NFOA response 264248.000211_31598772 9.1_-A....pdf	(1-1) 1	Amendment/Request for Reconsideration-After Non- Final Rejection	86 KB
2025-05-21 NFOA response 264248.000211_31598772 9.1_-REM.pdf	(2-2) 1	Applicant Arguments/Remarks Made in an Amendment	87 KB

Digest

DOCUMENT**MESSAGE DIGEST(SHA-512)**

2025-05-21 NFOA response 264248.000211_315987729.1_.pdf	75D236ACCCD14A84B9C60FD6C81503368F6823DE7BEAB9F5 86E365D52E7CCCB01AB42092CCBF2F84BBBBBF7CE6690A13 D301D6E9319AD8BDBF0D0FF68F85BA71
2025-05-21 NFOA response 264248.000211_315987729.1_-A....pdf	BCED771A2DD50925ED555E453019902B4E4EE63867F10CF05 209B2062FA3C7AD91C3B5489BDE69FC6FFE5798079B6E2C63 06B1779F7DC23D7864EA2387441836
2025-05-21 NFOA response 264248.000211_315987729.1_-REM.pdf	70498C47B6E52B8E859C4E723DA84CDA16DAF737A7F7799C 4F814EA7D9056FAE1F92A2A1AE10052AA8F857EBD73EDE57 5F696FCDA3AE10060B8FF3446772750B

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

New Applications Under 35 U.S.C. 111

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

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

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New International Application Filed with the USPTO as a Receiving Office

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors	:	Andrei Golman	)	
			)	
Applicant	:	Sanas.ai Inc.	)	Examiner:
			)	VU B HANG
Serial No.	:	18/228,023	)	
			)	
Cnfrm. No.	:	4049	)	Art Unit:
			)	2654
Filed	:	July 31, 2023	)	
			)	
For	:	REAL TIME CORRECTION OF ACCENT	)	
		IN SPEECH AUDIO SIGNALS	)	
			)	

AMENDMENT IN RESPONSE TO NON-FINAL OFFICE ACTION

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

Dear Commissioner:

In response to the May 21, 2025 non-final Office action, **Remarks** begin on page 2 of this paper.

-2-

REMARKS

Claims 1, 3, 8, 11, 13, 18, 20-21, and 24-27 are rejected on the ground of non-statutory double patenting as allegedly being unpatentable over claims 1, 2, 7, and 9 of U.S. Patent No. 11,715,457. Applicant has filed an e-terminal disclaimer on June 6, 2025 and, accordingly, respectfully requests that this rejection be reconsidered and withdrawn.

In view of the foregoing, Applicant submits that this case is in condition for allowance and such allowance is earnestly solicited. The Office is encouraged to contact the undersigned to discuss any deficiencies the Office believes prevent allowability of the above-identified application.

Respectfully submitted,

Dated: June 9, 2025

/Nicholas J. Gallo/
Nicholas J. Gallo
Registration No. 60,758

TROUTMAN PEPPER LOCKE LLP
70 Linden Oaks, Suite 210
Rochester NY 14625
Telephone: 585-270-2133
E-mail: nicholas.gallo@troutman.com



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

11951 7590 08/05/2025
Troutman Pepper Locke LLP (Rochester)
70 Linden Oaks
Suite 210
Rochester, NY 14625

EXAMINER

HANG, VU B

ART UNIT

PAPER NUMBER

2654

DATE MAILED: 08/05/2025

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/228,023	07/31/2023	Andrei Golman	264248.000211	4049

TITLE OF INVENTION: REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$516	\$0.00	\$0.00	\$516	11/05/2025

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

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

HOW TO REPLY TO THIS NOTICE:

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

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

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

For purposes of this notice, small entity fees are 40% the amount of undiscounted fees, and micro entity fees are 20% the amount of undiscounted fees.

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

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

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

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via the USPTO patent electronic filing system.

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

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

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence 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. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

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

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

11951 7590 08/05/2025
Troutman Pepper Locke LLP (Rochester)
70 Linden Oaks
Suite 210
Rochester, NY 14625

Certificate of Mailing or Transmission

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

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/228,023	07/31/2023	Andrei Golman	264248.000211	4049

TITLE OF INVENTION: REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$516	\$0.00	\$0.00	\$516	11/05/2025

EXAMINER	ART UNIT	CLASS-SUBCLASS
HANG, VU B	2654	704-240000

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/AIA/122 or PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or 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,

1 _____

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

2 _____

3 _____

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

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

(A) NAME OF ASSIGNEE

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

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

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required)

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

☐ Electronic Payment via the USPTO patent electronic filing system ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

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

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

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

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

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

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

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

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/228,023	07/31/2023	Andrei Golman	264248.000211	4049
11951	7590	08/05/2025	EXAMINER	
Troutman Pepper Locke LLP (Rochester)			HANG, VU B	
70 Linden Oaks			ART UNIT	
Suite 210			PAPER NUMBER	
Rochester, NY 14625			2654	

DATE MAILED: 08/05/2025

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

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

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

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

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

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

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

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013).

<https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf>

Routine uses of the information in this record may include disclosure to:

- 1) law enforcement, in the event that the system of records indicates a violation or potential violation of law;
- 2) a federal, state, local, or international agency, in response to its request;
- 3) a contractor of the USPTO having need for the information in order to perform a contract;
- 4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record;
- 5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record;
- 6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations;
- 7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals;
- 8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c));
- 9) the Office of Personnel Management (OPM) for personnel research purposes; and
- 10) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Notice of Allowability	Application No. 18/228,023	Applicant(s) Golman et al.	
	Examiner VU B HANG	Art Unit 2654	AIA (First Inventor to File) Status Yes

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

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

1. ☒ This communication is responsive to 06/09/2025.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

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

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

Certified copies:

a) ☐ All b) ☐ Some* c) ☐ None of the:

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

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

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

* Certified copies not received: _____.

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

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

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

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

Attachment(s)

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

/VU B HANG/ Primary Examiner, Art Unit 2654	
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Continuation of 3. The allowed claim(s) is/are: 1,3-4,7-8,11,13-14,17-18 and 20-27

Notice of Pre-AIA or AIA Status

- The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.
- Claims 1, 3-4, 7-8, 11, 13-14, 17-18 and 20-27 (renumbered 1-18, respectively) are allowed.

Response to Arguments

Applicant's arguments filed, with respect to the rejection of Claims 1, 3-4, 7-8, 11, 13-14, 17-18 and 20-27 under non-statutory double patenting, have been fully considered and are persuasive. A terminal disclaimer with respect to U.S. Patent No. 11,715,457 has been filed. Therefore, the rejection of Claims 1, 3-4, 7-8, 11, 13-14, 17-18 and 20-27 under non-statutory double patenting has been withdrawn.

Terminal Disclaimer

The terminal disclaimer filed on 06/09/2025 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No. 11,715,457 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Allowable Subject Matter

Claims 1, 3-4, 7-8, 11, 13-14, 17-18 and 20-27.

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

The prior art of record does not teach, disclose or suggest the claimed limitation of (in combination with all other limitations in the claim) "synthesizing a spectrum representation based on

the acoustic features, the linguistic features, and a speaker embedding for a human speaker”, as found in **Claim 1**. Similar features are claimed in **Claims 3-4, 7-8, 11, 13-14, 17-18 and 20-27**.

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

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VU B HANG whose telephone number is (571)272-0582.

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

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Hai Phan, can be reached at (571)272-6338. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: <https://patentcenter.uspto.gov>. Visit <https://www.uspto.gov/patents/apply/patent-center> for more information about Patent Center and <https://www.uspto.gov/patents/docx> for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/VU B HANG/
Primary Examiner, Art Unit 2654

<i>Search Notes</i> 	Application/Control No. 18/228,023	Applicant(s)/Patent Under Reexamination Golman et al.
	Examiner VU B HANG	Art Unit 2654

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner
G10L 15/16, 25/27, 25/30, 15/12, 19/005, 19/00, 19/02, 19/08, 25/90, 13/02, 13/04, 13/06, 21/003, 25/00, 25/75, 13/07, 13/033, 13/08, 13/10	05/17/2025	VH
G10L 15/16, 25/27, 25/30, 15/12, 19/005, 19/00, 19/02, 19/08, 25/90, 13/02, 13/04, 13/06, 21/003, 25/00, 25/75, 13/07, 13/033, 13/08, 13/10, 15/20, 15/07, 15/22, 15/26, 15/30, 15/02, 15/063, 15/08, 25/87, 15/14, 15/1815, 15/197, 2015/025	07/26/2025	VH

US Classification - Searched*			
Class	Subclass	Date	Examiner

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

Search Notes		
Search Notes	Date	Examiner
PE2E Search, Limited Text Search	05/17/2025	VH
Updated PE2E Search, Limited Text Search	07/26/2025	VH
Inventor Search	07/26/2025	VH
Similarity Search with CPC 15/02, 13/02, 13/033 and Text	07/26/2025	VH

/VU B HANG/ Primary Examiner, Art Unit 2654	
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<i>Search Notes</i> 	Application/Control No. 18/228,023	Applicant(s)/Patent Under Reexamination Golman et al.
	Examiner VU B HANG	Art Unit 2654

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
G10L	15/02	07/26/2025	VH

VU B HANG/ Primary Examiner, Art Unit 2654	
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<i>Index of Claims</i> 	Application/Control No. 18/228,023	Applicant(s)/Patent Under Reexamination Golman et al.
	Examiner VU B HANG	Art Unit 2654

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

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	05/17/2025	07/26/2025							
1	1	✓	=							
	2	-	-							
2	3	✓	=							
3	4	✓	=							
	5	-	-							
	6	-	-							
4	7	✓	=							
5	8	✓	=							
	9	-	-							
	10	-	-							
6	11	-	=							
	12	-	-							
7	13	✓	=							
8	14	✓	=							
	15	-	-							
	16	-	-							
9	17	✓	=							
10	18	✓	=							
	19	-	-							
11	20	✓	=							
12	21	✓	=							
13	22	✓	=							
14	23	✓	=							
15	24	✓	=							
16	25	✓	=							
17	26	✓	=							
18	27	✓	=							

Issue Classification 	Application/Control No. 18/228,023	Applicant(s)/Patent Under Reexamination Golman et al.
	Examiner VU B HANG	Art Unit 2654

CPC						
Symbol					Type	Version
G10L	/	15	/	005	F	2013-01-01
G10L	/	13	/	033	I	2013-01-01
G10L	/	15	/	02	I	2013-01-01
G10L	/	13	/	02	A	2013-01-01
G10L	/	15	/	22	A	2013-01-01
G10L	/	13	/	04	A	2013-01-01

CPC Combination Sets				
Symbol	Type	Set	Ranking	Version
/				

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 18	
/VU B HANG/ Primary Examiner, Art Unit 2654 (Primary Examiner) _____ (Date) _____		O.G. Print Claim(s) 1	O.G. Print Figure 3

Issue Classification 	Application/Control No. 18/228,023	Applicant(s)/Patent Under Reexamination Golman et al.
	Examiner VU B HANG	Art Unit 2654

INTERNATIONAL CLASSIFICATION			
CLAIMED			
G10L	/	15	/ 00
NON-CLAIMED			
	/		/

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS
704	240

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

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	18	
/VU B HANG/ Primary Examiner, Art Unit 2654 (Primary Examiner)	26 July 2025 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 3

Issue Classification 	Application/Control No. 18/228,023	Applicant(s)/Patent Under Reexamination Golman et al.
	Examiner VU B HANG	Art Unit 2654

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47															
CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	10	18												
2	3	11	20												
3	4	12	21												
4	7	13	22												
5	8	14	23												
6	11	15	24												
7	13	16	25												
8	14	17	26												
9	17	18	27												

NONE	Total Claims Allowed:					
(Assistant Examiner)	(Date)	18				
/VU B HANG/ Primary Examiner, Art Unit 2654 (Primary Examiner)	26 July 2025 (Date)	<table><tr><td>O.G. Print Claim(s)</td><td>O.G. Print Figure</td></tr><tr><td>1</td><td>3</td></tr></table>	O.G. Print Claim(s)	O.G. Print Figure	1	3
O.G. Print Claim(s)	O.G. Print Figure					
1	3					



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BIB DATA SHEET

CONFIRMATION NO. 4049

SERIAL NUMBER 18/228,023	FILING or 371(c) DATE 07/31/2023 RULE	CLASS 704	GROUP ART UNIT 2654	ATTORNEY DOCKET NO. 264248.000211		
APPLICANTS Sanas.ai Inc., Palo Alto, CA;						
INVENTORS Andrei Golman, San Francisco, CA; Dmitrii Sadykov, Yerevan, ARMENIA;						
** CONTINUING DATA ***** This application is a CIP of 18/083,727 12/19/2022 PAT 11715457 which claims benefit of 63/297,901 01/10/2022						
** FOREIGN APPLICATIONS *****						
** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** SMALL ENTITY ** 08/10/2023						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and /VU B HANG/ Acknowledged Examiner's Signature		☐ Met after Allowance VH Initials	STATE OR COUNTRY NY	SHEETS DRAWINGS 14	TOTAL CLAIMS 20	INDEPENDENT CLAIMS 3
ADDRESS Troutman Pepper Locke LLP (Rochester) 70 Linden Oaks Suite 210 Rochester, NY 14625 UNITED STATES						
TITLE REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS						
FILING FEE RECEIVED 0.00	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			☐ All Fees		
				☐ 1.16 Fees (Filing)		
				☐ 1.17 Fees (Processing Ext. of time)		
				☐ 1.18 Fees (Issue)		
				☐ Other _____		
			☐ Credit			

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	2013	(audio SAME stream SAME chunk\$1 SAME frame\$1)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:06 PM
L2	9	(audio SAME stream SAME chunk\$1 SAME extract\$3 SAME (acoustic ADJ feature\$1))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:07 PM
L3	25	(audio SAME chunk\$1 SAME extract\$3 SAME (acoustic ADJ feature\$1))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:07 PM
L4	9	(audio SAME chunk\$1 SAME extract\$3 SAME (acoustic ADJ	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY,	OR	ON	ON	2025/05/16 06:08 PM

L5	2461	feature\$1) SAME (linguistic ADJ feature\$1)) (accent near4 (enhancement OR enhancing OR modification OR modify\$3 OR correct\$3))	CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:35 PM
L6	512	((accent near4 (enhancement OR enhancing OR modification OR modify\$3 OR correct\$3)) SAME (synthesiz\$3 OR synthesis))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:36 PM
L7	4	((accent near4 (enhancement OR enhancing OR modification OR modify\$3 OR correct\$3)) SAME (synthesiz\$3 OR synthesis) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (vocoder OR output))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK,	OR	ON	ON	2025/05/16 06:37 PM

L8	4	((accent near4 (enhancement OR enhancing OR modification OR modify\$3 OR correct\$3)) SAME (synthesiz\$3 OR synthesis) SAME ((spectrum ADJ representation) OR melspectrogram))	TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:38 PM
L9	4	((accent near4 (enhancement OR enhancing OR modification OR modify\$3 OR correct\$3)) SAME ((spectrum ADJ representation) OR melspectrogram))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:38 PM
L10	43	((accent OR voice) SAME (enhancement OR enhancing OR modification OR modify\$3 OR correct\$3) SAME ((spectrum ADJ representation) OR melspectrogram))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:39 PM
L11	5	((accent OR voice) SAME (enhancement OR enhancing OR modification OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU,	OR	ON	ON	2025/05/16 06:39 PM

		modify\$3 OR correct\$3) SAME ((spectrum ADJ representation) OR melspectrogram) SAME acoustic SAME linguistic)	CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L12	4	((accent OR voice) SAME (enhancement OR enhancing OR modification OR modify\$3 OR correct\$3) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 06:40 PM
L13	2947	(G10L ADJ 15/16)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:02 PM
L14	339	(G10L ADJ 25/27)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:02 PM

L15	1422	(G10L ADJ 25/30)	VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:02 PM
L16	1201	(G10L ADJ 19/005)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:02 PM
L17	2338	(G10L ADJ 19/00)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:02 PM
L18	3298	(G10L ADJ 15/02)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA,	OR	ON	ON	2025/05/16 11:02 PM

L19	230	(G10L ADJ 15/12)	EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:02 PM
L20	14430	(G10L ADJ 15/22)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:02 PM
L21	1354	(G10L ADJ 15/07)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:02 PM

L22	2904	(G10L ADJ 15/20)	JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:03 PM
L23	638	(G10L ADJ 25/87)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:03 PM
L24	2824	(G10L ADJ 25/78)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:03 PM
L25	3225	(G10L ADJ 15/1822)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB,	OR	ON	ON	2025/05/16 11:03 PM

L26	2009	(G10L ADJ 15/183)	HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:03 PM
L27	663	(G10L ADJ 15/193)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:03 PM
L28	1084	(G10L ADJ 15/19)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:03 PM

L29	1369	(G10L ADJ 19/02)	IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:04 PM
L30	966	(G10L ADJ 19/0204)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:04 PM
L31	313	(G10L ADJ 19/035)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:04 PM
L32	717	(G10L ADJ 19/0212)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS,	OR	ON	ON	2025/05/16 11:04 PM

L33	194	(G10L ADJ 19/083)	IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:04 PM
L34	1171	(G10L ADJ 21/038)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:04 PM
L35	411	(G10L ADJ 19/08)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:05 PM

L36	203	(G10L ADJ 19/09)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:05 PM
L37	751	(G10L ADJ 21/04)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:05 PM
L38	813	(G10L ADJ 25/90)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:05 PM
L39	0	(G10L ADJ 2025/06)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO,	OR	ON	ON	2025/05/16 11:05 PM

L40	37	(G10L ADJ 2025/932)	MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:05 PM
L41	38	(G10L ADJ 2025/935)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:06 PM
L42	40	(G10L ADJ 2025/906)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:06 PM
L43	513	(G10L ADJ 25/93)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16

			USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				11:06 PM
L44	625	(G10L ADJ 19/04)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:06 PM
L45	267	(G10L ADJ 19/07)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:06 PM
L46	649	(G10L ADJ 19/06)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO,	OR	ON	ON	2025/05/16 11:06 PM

L47	411	(G10L ADJ 19/08)	NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:07 PM
L48	194	(G10L ADJ 19/083)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:07 PM
L49	64	(G10L ADJ 19/087)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:07 PM
L50	590	(G10L ADJ 19/12)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP,	OR	ON	ON	2025/05/16 11:07 PM

L51	341	(G10L ADJ 19/0018)	AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:07 PM
L52	79	(G10L ADJ 25/75)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:08 PM
L53	458	(G10L ADJ 21/003)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:08 PM

L54	559	(G10L ADJ 25/00)	RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:08 PM
L55	1007	(G10L ADJ 13/02)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:08 PM
L56	745	(G10L ADJ 13/04)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:08 PM
L57	482	(G10L ADJ 13/06)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY,	OR	ON	ON	2025/05/16 11:08 PM

L58	337	(G10L ADJ 13/07)	CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:08 PM
L59	1928	(G10L ADJ 13/08)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:09 PM
L60	731	(G10L ADJ 13/10)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:09 PM

L61	1371	(G10L ADJ 13/033)	TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:09 PM
L62	30590	(L13 OR L14 OR L15 OR L16 OR L17 OR L18 OR L19 OR L20 OR L21 OR L22 OR L23 OR L24 OR L25 OR L26 OR L27 OR L28 OR L29 OR L30 OR L31 OR L32 OR L33 OR L34 OR L35 OR L36 OR L37 OR L38 OR L39 OR L40 OR L41 OR L42 OR L43 OR L44 OR L45 OR L46 OR L47 OR L48 OR L49 OR L50 OR L51 OR L52 OR L53 OR L54 OR L55 OR L56 OR L57 OR L58 OR L59 OR L60 OR L61)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:12 PM
L63	0	L62 AND ((audio near3 (input OR stream)) SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:18 PM

L64	0	vocoder SAME (output near3 (audio OR chunk))) L62 AND (audio SAME (input OR stream) SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME vocoder SAME (output near3 (audio OR chunk)))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:19 PM
L65	0	L62 AND (audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME vocoder SAME (output near3 (audio OR chunk)))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:19 PM
L66	0	L62 AND (audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME (vocoder OR (output	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:19 PM

L67	0	near3 (audio OR chunk)))) L62 AND (audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME vocoder)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:20 PM
L68	0	L62 AND (audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:20 PM
L69	0	L62 AND (audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:20 PM
L70	0	L62 AND (audio SAME (chunk\$1 OR frame\$1) SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB,	OR	ON	ON	2025/05/16 11:20 PM

		feature\$1) OR phoneme OR posterior) SAME accent SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L71	0	L62 AND (audio SAME (chunk\$1 OR frame\$1) SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:20 PM
L72	0	L62 AND ((accent near4 (correct\$3 OR enhancement OR modification OR modify\$3)) SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:21 PM
L73	0	L62 AND (accent SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT;	OR	ON	ON	2025/05/16 11:22 PM

L74	0	L62 AND (((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:22 PM
L75	0	((audio near3 (input OR stream)) SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME vocoder SAME (output near3 (audio OR chunk)))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:22 PM
L76	0	(audio SAME (input OR stream) SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME vocoder SAME (output near3 (audio OR chunk)))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:22 PM
L77	0	(audio SAME (chunk\$1	(US-PGPUB; USPAT;	OR	ON	ON	2025/05/16

		OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME vocoder SAME (output near3 (audio OR chunk)))	USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				11:22 PM
L78	0	(audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME (vocoder OR (output near3 (audio OR chunk))))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:22 PM
L79	0	(audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME (vocoder OR (output near3 (audio OR chunk))))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:23 PM
L80	0	(audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding) SAME vocoder)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:23 PM

		feature\$1) OR phoneme OR posterior) SAME accent SAME synthesiz\$3 SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L81	0	(audio SAME (chunk\$1 OR frame\$1) SAME extract\$3 SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:23 PM
L82	0	(audio SAME (chunk\$1 OR frame\$1) SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME accent SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:23 PM
L83	0	(audio SAME (chunk\$1 OR frame\$1) SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT;	OR	ON	ON	2025/05/16 11:23 PM

L84	0	((accent near4 (correct\$3 OR enhancement OR modification OR modify\$3)) SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:23 PM
L85	0	(accent SAME ((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:24 PM
L86	0	((((audio ADJ feature\$1) OR pitch OR energy) SAME ((linguistic ADJ feature\$1) OR phoneme OR posterior) SAME (melspectrogram OR (spectrum ADJ representation)) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:24 PM
L87	0	L62 AND (audio SAME stream SAME chunk\$1 SAME extract\$3 SAME (acoustic ADJ feature\$1))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS,	OR	ON	ON	2025/05/16 11:24 PM

			IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L88	0	L62 AND (audio SAME chunk\$1 SAME extract\$3 SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:24 PM
L89	1	L62 AND (audio SAME chunk\$1 SAME extract\$3 SAME (acoustic ADJ feature\$1))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:24 PM
L90	0	L62 AND ((accent OR voice) SAME (enhancement OR enhancing OR modification OR modify\$3 OR correct\$3) SAME ((spectrum ADJ representation) OR melspectrogram))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:25 PM

L91	0	L62 AND (((acoustic ADJ feature\$1) OR pitch) SAME ((liguistic ADJ feature\$1) OR phoneme) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:27 PM
L92	0	(((acoustic ADJ feature\$1) OR pitch) SAME ((liguistic ADJ feature\$1) OR phoneme) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:28 PM
L93	0	L62 AND ((voice OR accent) SAME (correct\$3 OR enhacement) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:29 PM
L94	0	L62 AND ((voice OR accent) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL,	OR	ON	ON	2025/05/16 11:29 PM

L95	5	((voice OR accent) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:29 PM
L96	4	((voice OR accent) SAME (correct\$3 OR enhanc\$4) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:29 PM
L97	0	L62 AND ((voice OR accent) SAME (feature near4 extract\$3) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:30 PM
L98	0	L62 AND ((voice OR	(US-PGPUB; USPAT;	OR	ON	ON	2025/05/16

		accent) SAME feature SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				11:30 PM
L99	0	L62 AND ((voice OR accent) SAME acoustic SAME linguistic SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:30 PM
L100	0	L62 AND ((voice OR accent) SAME (acoustic OR pitch) SAME (linguistic OR phoneme) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:31 PM
L101	4	((voice OR accent) SAME (feature near4 extract\$3) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL,	OR	ON	ON	2025/05/16 11:31 PM

L102	5	((voice OR accent) SAME feature SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:31 PM
L103	4	((voice OR accent) SAME acoustic SAME linguistic SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:31 PM
L104	4	((voice OR accent) SAME (acoustic OR pitch) SAME (linguistic OR phoneme) SAME ((spectrum ADJ representation) OR melspectrogram) SAME (speaker ADJ embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/16 11:31 PM
L105	1	L62 AND (input SAME (first ADJ sample ADJ	(US-PGPUB; USPAT; USOCR; FIT (AP, AT,	OR	ON	ON	2025/05/17 06:58 PM

		rate) SAME output SAME (second ADJ sample ADJ rate))	AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L106	2	L62 AND (audio SAME (first ADJ sample ADJ rate) SAME output SAME (second ADJ sample ADJ rate))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/17 06:58 PM
L107	97	(audio SAME input SAME (first ADJ sample ADJ rate) SAME output SAME (second ADJ sample ADJ rate))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/17 06:58 PM
L108	4452	L62 AND (parallel near3 process\$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE,	OR	ON	ON	2025/05/17 07:22 PM

L109	11	L62 AND ((parallel near3 process\$3) SAME (extract\$3 near4 feature\$1) SAME (synthesiz\$3 OR output))	SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/05/17 07:23 PM
L110	876	golman.in.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:45 PM
L111	3610	sadykov.in.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:45 PM
L112	4481	(L110 OR L111)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY,	OR	ON	ON	2025/07/26 10:45 PM

L113	894003	(G10L 15/07)	CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:46 PM
L114	923773	(G10L 15/20)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:46 PM
L115	900957	(G10L 15/22)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:46 PM

L116	900850	(G10L 15/26)	TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:46 PM
L117	904286	(G10L 15/30)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:46 PM
L118	957210	(G10L 15/02)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:46 PM
L119	926144	(G10L 15/08)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU,	OR	ON	ON	2025/07/26 10:46 PM

L120	910289	(G10L 15/14)	CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:46 PM
L121	891987	(G10L 15/197)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:46 PM
L122	1385	(G10L ADJ 15/07)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN,	OR	ON	ON	2025/07/26 10:47 PM

L123	2973	(G10L ADJ 15/20)	WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:47 PM
L124	14832	(G10L ADJ 15/22)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:47 PM
L125	9138	(G10L ADJ 15/26)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:47 PM
L126	4686	(G10L ADJ 15/30)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA,	OR	ON	ON	2025/07/26 10:47 PM

L127	3402	(G10L ADJ 15/02)	EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:47 PM
L128	4421	(G10L ADJ 15/063)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:48 PM
L129	4079	(G10L ADJ 15/08)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:48 PM

L130	828	(G10L ADJ 15/14)	JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:48 PM
L131	1163	(G10L ADJ 15/197)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:48 PM
L132	3492	(G10L ADJ 15/1815)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:48 PM
L133	400	(G10L ADJ 2015/025)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB,	OR	ON	ON	2025/07/26 10:48 PM

L134	26276	(L122 OR L123 OR L124 OR L125 OR L126 OR L127 OR L128 OR L129 OR L130 OR L131 OR L132 OR L133)	HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:50 PM
L135	37575	(L62 OR L134)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:50 PM
L136	0	L135 AND ((audio ADJ stream) SAME (extract\$3 near4(acoustic ADJ feature\$1) near4 (linguistic ADJ feature\$1)) SAME ((reduced OR native) near3 accent) SAME (synthesiz\$3 near4 (((spectrum OR spectrum) ADJ representation) OR melspectrogram OR mel-spectrogram)))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:56 PM

L137	0	SAME (speaker near3 embedding) SAME vocoder SAME (generat3 near4 (output OR audio OR voice))) L135 AND ((audio ADJ stream) SAME (extract\$3 near4(acoustic ADJ feature\$1) near4 (linguistic ADJ feature\$1)) SAME ((reduced OR native) near3 accent) SAME (synthesiz\$3 near4 (((spectrum OR spectrum) ADJ representation) OR melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding) SAME vocoder SAME generat3 SAME (output OR audio OR voice)))	IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:57 PM
L138	0	L135 AND ((audio ADJ stream) SAME (extract\$3 near4(acoustic ADJ feature\$1) near4 (linguistic ADJ feature\$1)) SAME ((reduced OR native) near3 accent) SAME (synthesiz\$3 near4 (((spectrum OR spectrum) ADJ representation) OR melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding) SAME vocoder SAME (output OR audio OR voice)))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:57 PM
L139	0	L135 AND ((audio ADJ stream) SAME (extract\$3 near4(acoustic ADJ feature\$1) near4 (linguistic ADJ feature\$1)) SAME ((reduced OR native) near3 accent) SAME (synthesiz\$3 near4 (((spectrum OR spectrum) ADJ representation) OR	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN,	OR	ON	ON	2025/07/26 10:57 PM

		melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding) SAME (vocoder OR (output OR audio OR voice)))	WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L140	0	L135 AND ((audio ADJ stream) SAME extract\$3 SAME ((acoustic ADJ feature\$1) near5 (linguistic ADJ feature\$1)) SAME ((reduced OR native) near3 accent) SAME (synthesiz\$3 near4 (((spectrum OR spectrum) ADJ representation) OR melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding) SAME (vocoder OR (output OR audio OR voice)))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:57 PM
L141	0	L135 AND ((audio ADJ stream) SAME extract\$3 SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME ((reduced OR native) near3 accent) SAME (synthesiz\$3 near4 (((spectrum OR spectrum) ADJ representation) OR melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding) SAME (vocoder OR (output OR audio OR voice)))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:57 PM
L142	0	L135 AND ((audio ADJ stream) SAME extract\$3 SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME (reduced OR native) SAME accent SAME (synthesiz\$3 near4 (((spectrum OR spectrum) ADJ representation) OR	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN,	OR	ON	ON	2025/07/26 10:58 PM

		melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding) SAME (vocoder OR (output OR audio OR voice)))	WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L143	0	L135 AND ((audio ADJ stream) SAME extract\$3 SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME accent SAME (synthesiz\$3 near4 (((spectrum OR spectrum) ADJ representation) OR melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding) SAME (vocoder OR (output OR audio OR voice)))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:58 PM
L144	0	L135 AND ((audio ADJ stream) SAME extract\$3 SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME accent SAME synthesiz\$3 SAME (((spectrum OR spectrum) ADJ representation) OR melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding) SAME (vocoder OR (output OR audio OR voice)))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:58 PM
L145	0	L135 AND ((audio ADJ stream) SAME extract\$3 SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME accent SAME synthesiz\$3 SAME (((spectrum OR spectrum) ADJ representation) OR melspectrogram OR mel-spectrogram)) SAME (speaker near3	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT;	OR	ON	ON	2025/07/26 10:58 PM

L146	0	embedding)) L135 AND ((audio ADJ stream) SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME accent SAME synthesiz\$3 SAME (((spectrum OR spectrum) ADJ representation) OR melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding))	IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:58 PM
L147	0	L135 AND (audio SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME accent SAME synthesiz\$3 SAME (((spectrum OR spectrum) ADJ representation) OR melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:58 PM
L148	0	L135 AND ((acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME accent SAME synthesiz\$3 SAME (((spectrum OR spectrum) ADJ representation) OR melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:59 PM
L149	0	L135 AND ((acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME synthesiz\$3 SAME (((spectrum OR spectrum) ADJ	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS,	OR	ON	ON	2025/07/26 10:59 PM

		representation) OR melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding))	IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L150	0	L135 AND ((acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME synthesiz\$3 SAME (((spectrum OR spectral) ADJ representation) OR melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:59 PM
L151	0	L135 AND ((acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME (((spectrum OR spectral) ADJ representation) OR melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 10:59 PM
L152	1	L135 AND ((acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME ((spectrum OR spectral) OR melspectrogram OR mel-spectrogram) SAME (speaker near3 embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 11:00 PM

L153	0	L135 AND ((audio ADJ stream) SAME (extract\$3 near4(acoustic ADJ feature\$1) near4 (linguistic ADJ feature\$1)) SAME ((reduced OR native) near3 accent) SAME (synthesiz\$3 near4 (((spectrum OR spectral) ADJ representation) OR melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding) SAME vocoder SAME (generat\$3 near4 (output OR audio OR voice)))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 11:00 PM
L154	0	((audio ADJ stream) SAME (extract\$3 near4(acoustic ADJ feature\$1) near4 (linguistic ADJ feature\$1)) SAME ((reduced OR native) near3 accent) SAME (synthesiz\$3 near4 (((spectrum OR spectral) ADJ representation) OR melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding) SAME vocoder SAME (output OR audio OR voice))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 11:01 PM
L155	1	(audio SAME (extract\$3 near4(acoustic ADJ feature\$1) near4 (linguistic ADJ feature\$1)) SAME ((reduced OR native) near3 accent) SAME (synthesiz\$3 near4 (((spectrum OR spectral) ADJ representation) OR melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding) SAME vocoder SAME (output OR audio OR voice))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 11:01 PM
L156	1	(audio SAME (extract\$3 near4(acoustic ADJ	(US-PGPUB; USPAT; USOCR; FIT (AP, AT,	OR	ON	ON	2025/07/26 11:01 PM

		feature\$1) near4 (linguistic ADJ feature\$1)) SAME ((reduced OR native) near3 accent) SAME (synthesiz\$3 near4 (((spectrum OR spectral) ADJ representation) OR melspectrogram OR mel-spectrogram)) SAME (speaker near3 embedding) SAME (vocoder OR output OR audio OR voice))	AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L157	1	(audio SAME (extract\$3 near4(acoustic ADJ feature\$1) near4 (linguistic ADJ feature\$1)) SAME ((reduced OR native) near3 accent) SAME synthesiz\$3 SAME (spectrum OR spectral OR melspectrogram OR mel-spectrogram) SAME (speaker near3 embedding) SAME (vocoder OR output OR audio OR voice))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 11:02 PM
L158	1	(audio SAME (extract\$3 near4(acoustic ADJ feature\$1) near4 (linguistic ADJ feature\$1)) SAME (reduced OR native) SAME accent SAME (spectrum OR spectral OR melspectrogram OR mel-spectrogram) SAME (speaker near3 embedding) SAME (vocoder OR output OR audio OR voice))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 11:02 PM
L159	4	(audio SAME extract\$3 SAME ((acoustic ADJ feature\$1) near4 (linguistic ADJ feature\$1)) SAME (reduced OR native) SAME accent SAME (spectrum OR spectral OR melspectrogram OR mel-spectrogram)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL,	OR	ON	ON	2025/07/26 11:02 PM

L160	4	SAME (speaker near3 embedding) SAME (vocoder OR output OR audio OR voice)) (audio SAME extract\$3 SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME (reduced OR native) SAME accent SAME (spectrum OR spectral OR melspectrogram OR mel-spectrogram) SAME (speaker near3 embedding) SAME (vocoder OR output OR audio OR voice))	PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 11:02 PM
L161	4	(audio SAME extract\$3 SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME accent SAME (spectrum OR spectral OR melspectrogram OR mel-spectrogram) SAME (speaker near3 embedding) SAME (vocoder OR output OR audio OR voice))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 11:02 PM
L162	4	(audio SAME extract\$3 SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME accent SAME (spectrum OR spectral OR melspectrogram OR mel-spectrogram) SAME (speaker near3 embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 11:03 PM
L163	3	(audio SAME extract\$3 SAME (acoustic ADJ	(US-PGPUB; USPAT; USOCR; FIT (AP, AT,	OR	ON	ON	2025/07/26 11:03 PM

		feature\$1) SAME (linguistic ADJ feature\$1) SAME synthesiz\$3 SAME (spectrum OR spectral OR melspectrogram OR mel-spectrogram) SAME (speaker near3 embedding))	AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L164	6	(audio SAME extract\$3 SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME (spectrum OR spectral OR melspectrogram OR mel-spectrogram) SAME (speaker near3 embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 11:03 PM
L165	7	(audio SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME (spectrum OR spectral OR melspectrogram OR mel-spectrogram) SAME (speaker near3 embedding))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/26 11:04 PM
L166	4	L112 AND (L162 OR L63 OR L164 OR L165)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE,	OR	ON	ON	2025/07/26 11:04 PM

L167	50	(Artificial Intelligence) Similar to: 18/228,023 with 0 CPC Selections and 0 Text Selections Text: (US-11715457-B1 OR US-20230223011-A1 OR WO-2023132932- A1 OR US- 20220157316-A1 OR US-20230401338-A1 OR US-20250166603- A1 OR CN-107958666- A OR US-11735162-B2 OR WO-2022083969- A1 OR US- 20210217431-A1 OR US-11600284-B2 OR US-20220059121-A1 OR EP-3989217-A1 OR WO-2021070032-A1 OR CN-116490920-A OR US-20180174595- A1 OR US-10446136- B2 OR WO- 2020261357-A1 OR US-10163451-B2 OR CN-114667568-B OR CN-114667568-A OR EP-3989217-B1 OR US-20220358903-A1 OR US-12125496-B1 OR WO-2018119145- A1 OR US- 20210110812-A1 OR US-20180330719-A1 OR KR-102303917-B1 OR US-11151981-B2 OR US-12272350-B2 OR JP-2022552815-A OR US-20240296827- A1 OR US-7120580-B2 OR US-20200394997- A1 OR KR- 20190120176-A OR JP- 5306503-B2 OR JP- 2003511884-A OR AU- 2022203531-B1 OR DE-112020003875-T5 OR US-11361780-B2 OR US-10319365-B1	SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO))	OR	ON	ON	2025/07/26 11:07 PM
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L168	50	OR US-20240013770-A1 OR US-20240265908-A1 OR WO-2022236111-A1 OR JP-2012137777-A OR US-11990118-B2 OR CN-117475993-A OR US-20250029626-A1 OR CN-113228162-A OR US-20240386875-A1).did. (Artificial Intelligence) Similar to: 18/228,023 with 1 CPC Selection and 2 Text Selections Text: (KR-20070098094-A OR KR-100815115-B1 OR WO-2007114605-A1 OR US-20250182741-A1 OR US-7308407-B2 OR US-11715457-B1 OR US-20230223011-A1 OR JP-7152791-B2 OR CN-112262431-B OR WO-2023132932-A1 OR KR-102535338-B1 OR KR-20230018534-A OR EP-4270255-A2 OR US-20220157316-A1 OR EP-3655947-B1 OR CN-116129876-A OR KR-20250017286-A OR CN-113129914-A OR US-20170092258-A1 OR CN-106560891-B OR KR-102760605-B1 OR JP-2020187340-A OR ES-2964322-T3 OR KR-102637341-B1 OR US-20150248898-A1 OR US-20200075034-A1 OR US-20240144957-A1 OR KR-102796551-B1 OR CN-116453502-A OR CN-112242144-A OR US-20220139388-A1 OR US-20210020175-A1 OR US-20230169984-A1 OR US-12033641-B2 OR EP-4139816-B1 OR WO-2021169825-A1 OR US-11568878-B2	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO))	OR	ON	ON	2025/07/26 11:09 PM
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L169	50	OR US-20220335953-A1 OR CN-108417202-B OR US-12190888-B2 OR US-12254891-B2 OR EP-4018439-B1 OR KR-102609789-B1 OR US-20230410814-A1 OR US-20220059121-A1 OR US-20220301573-A1 OR KR-20230145816-A OR WO-2022220883-A1 OR CN-113314096-A OR US-20210043191-A1).did. (Artificial Intelligence) Similar to: 18/228,023 with 1 CPC Selection and 2 Text Selections Text: (US-11715457-B1 OR US-20230223011-A1 OR WO-2023132932-A1 OR CN-114566142-A OR US-20220157316-A1 OR US-12033614-B2 OR US-20230410789-A1 OR US-20220165247-A1 OR CN-111354332-A OR CN-116129876-A OR US-11580952-B2 OR CN-112634918-B OR CN-112863476-B OR US-20230178068-A1 OR CN-112289297-B OR US-12087273-B2 OR CN-112289297-A OR CN-112885326-A OR EP-3151239-A1 OR KR-20250038362-A OR CN-112863476-A OR CN-112634856-A OR CN-116453502-A OR CN-112634856-B OR KR-20250106508-A OR KR-20240096066-A OR KR-20240014257-A OR US-20250201229-A1 OR WO-2023244403-A1 OR CN-112885326-B OR US-20220051654-A1 OR EP-4018439-B1 OR US-11514888-B2 OR CN-119541448-A OR	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO))	OR	ON	ON	2025/07/26 11:09 PM
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L170	50	US-20250182741-A1 OR US-20220375453-A1 OR CN-120108379-A OR KR-102619408-B1 OR US-20200075034-A1 OR CN-114822487-B OR KR-20220071522-A OR CN-115312027-B OR KR-20070098094-A OR KR-100815115-B1 OR JP-2023035921-A OR KR-102796551-B1 OR WO-2021169825-A1 OR WO-2007114605-A1 OR KR-102623086-B1 OR KR-102621842-B1).did. (Artificial Intelligence) Similar to: 18/228,023 with 1 CPC Selection and 2 Text Selections Text: (US-20250182741-A1 OR EP-4018439-B1 OR KR-102619408-B1 OR US-20220375453-A1 OR US-12033614-B2 OR US-20230410789-A1 OR KR-102514990-B1 OR CN-111354332-A OR CN-113808571-B OR US-11790884-B1 OR US-11488575-B2 OR US-20170092258-A1 OR CN-113808571-A OR US-11354520-B2 OR KR-20210008510-A OR KR-20200092505-A OR KR-20220083987-A OR US-20210217404-A1 OR WO-2019222591-A1 OR JP-7106680-B2 OR CN-116453502-A OR US-11929058-B2 OR KR-20240096066-A OR WO-2023244403-A1 OR US-11715457-B1 OR WO-2008133814-A1 OR US-20230223011-A1 OR WO-2023132932-A1 OR US-20200075034-A1 OR US-7953600-B2 OR US-20080270140-	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO))	OR	ON	ON	2025/07/26 11:09 PM
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L171	50	A1 OR CN-114566142-A OR US-20220157316-A1 OR US-12190888-B2 OR US-7308407-B2 OR US-20230410814-A1 OR CN-120108379-A OR KR-20070098094-A OR KR-100815115-B1 OR CN-115312027-B OR JP-7152791-B2 OR US-20240169973-A1 OR KR-20220134347-A OR WO-2022203152-A1 OR KR-20230145816-A OR KR-102508640-B1 OR EP-4270255-A2 OR JP-2022137201-A OR KR-102609789-B1 OR JP-2024038474-A).did. (Artificial Intelligence) Similar to: 18/228,023 with 1 CPC Selection and 2 Text Selections Text: (JP-7152791-B2 OR EP-4270255-A2 OR US-20220157316-A1 OR KR-20250017286-A OR CN-113129914-A OR US-11790884-B1 OR KR-102760605-B1 OR CN-119600988-A OR ES-2964322-T3 OR EP-4018439-B1 OR US-11715457-B1 OR US-20230223011-A1 OR WO-2023132932-A1 OR CN-116453502-A OR US-20250182741-A1 OR US-20200075034-A1 OR KR-102619408-B1 OR US-20220375453-A1 OR KR-102796551-B1 OR US-12033614-B2 OR US-7308407-B2 OR JP-2017538146-A OR US-20240144957-A1 OR KR-102609789-B1 OR US-20230410789-A1 OR KR-20230145816-A OR KR-20070098094-A OR KR-100815115-B1 OR	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO))	OR	ON	ON	2025/07/26 11:10 PM
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		CN-120108379-A OR US-12033641-B2 OR US-20230169984-A1 OR CN-112262431-B OR US-12254891-B2 OR US-12190888-B2 OR US-20230410814- A1 OR KR-102535338- B1 OR KR- 20230018534-A OR CN-114566142-A OR US-11568878-B2 OR US-20220335953-A1 OR CN-115312027-B OR WO-2007114605- A1 OR US- 20220301573-A1 OR EP-3655947-B1 OR AU-2015336275-A1 OR EP-4139816-B1 OR US-12136410-B2 OR WO-2021071489-A1 OR CN-112634918-B OR WO-2016064730- A1).did.					
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PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N1	5	L115 AND (audio SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME (spectrum OR spectral OR melspectrogram OR mel-spectrogram) SAME (speaker near3 embedding))	(US-PGPUB; USPAT)	OR	ON	ON	2025/07/26 11:05 PM
N2	5	L118 AND (audio SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME (spectrum OR spectral OR melspectrogram OR mel-spectrogram) SAME (speaker near3 embedding))	(US-PGPUB; USPAT)	OR	ON	ON	2025/07/26 11:05 PM
N3	0	L56 AND ((udio SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME (spectrum OR spectral	(US-PGPUB; USPAT)	OR	ON	ON	2025/07/26 11:06 PM

N4	0	OR melspectrogram OR mel-spectrogram) SAME (speaker near3 embedding))) L55and ((udio SAME (acoustic ADJ feature\$1) SAME (linguistic ADJ feature\$1) SAME (spectrum OR spectral OR melspectrogram OR mel-spectrogram) SAME (speaker near3 embedding)))	(US-PGPUB; USPAT)	OR	ON	ON	2025/07/26 11:06 PM
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UNITED STATES
PATENT AND TRADEMARK OFFICEP.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov**ELECTRONIC ACKNOWLEDGEMENT RECEIPT**APPLICATION #
18/228,023RECEIPT DATE / TIME
08/08/2025 05:15:09 PM Z ETATTORNEY DOCKET #
264248.000211**Title of Invention**

REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

Application InformationAPPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 4049

FILED BY Mary Frances Heeks

PATENT CENTER # 71771550

FILING DATE 07/31/2023

CUSTOMER # 11951

FIRST NAMED
INVENTOR Andrei GolmanCORRESPONDENCE
ADDRESS -

AUTHORIZED BY Nicholas Gallo

Documents**TOTAL DOCUMENTS: 1**

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
20250808_IssueFee_Transmit_264248_000211.pdf	1	Issue Fee Payment (PTO-85B)	1148 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
20250808_IssueFee_Transmit_264248_000211.pdf	F1A51755CEC65A9EFB8EA2D7C893D1BE898E9429E962EA6E16019EF058B1B4AB051979559AC0C662AAF6321C445AEF827DD300C290C16FC1D952A1104F041460

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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



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ELECTRONIC PAYMENT RECEIPT

APPLICATION #
18/228,023

RECEIPT DATE / TIME
08/08/2025 05:15:09 PM Z ET

ATTORNEY DOCKET #
264248.000211

Title of Invention

REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	4049	FILED BY	Mary Frances Heeks
PATENT CENTER #	71771550	AUTHORIZED BY	Nicholas Gallo
CUSTOMER #	11951	FILING DATE	07/31/2023
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Andrei Golman

Payment Information

PAYMENT METHOD DA / 500436	PAYMENT TRANSACTION ID E202588H15536210	PAYMENT AUTHORIZED BY Mary Frances Heeks
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FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
2501	UTILITY ISSUE FEE	516.00	1	516.00
TOTAL AMOUNT:				\$516.00

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

New Applications Under 35 U.S.C. 111

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

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

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

PGR2026-00032

Krisp Technologies EX1002 Page 243

New International Application Filed with the USPTO as a Receiving Office

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

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via the USPTO patent electronic filing system.

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

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

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence 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. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

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Certificate of Mailing or Transmission

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

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(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/228,023	07/31/2023	Andrei Golman	264248.000211	4049

TITLE OF INVENTION: REAL TIME CORRECTION OF ACCENT IN SPEECH AUDIO SIGNALS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$516	\$0.00	\$0.00	\$516	11/05/2025

EXAMINER	ART UNIT	CLASS-SUBCLASS
HANG, VU B	2654	704-240000

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/AIA/122 or PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or 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.

Troutman Pepper Locke LLP

1. _____

2. _____

3. _____

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

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

(A) NAME OF ASSIGNEE

SANAS.AI INC.

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

Palo Alto, CA

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

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required)

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

☒ Electronic Payment via the USPTO patent electronic filing system ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. **500436**

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

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

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

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

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

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

Authorized Signature **/Nicholas J. Gallo/**

Date **August 8, 2025**

Typed or printed name **Nicholas J. Gallo**

Registration No. **60,758**



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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/228,023	09/09/2025	12412561	264248.000211	4049

11951 7590 08/27/2025
Troutman Pepper Locke LLP (Rochester)
70 Linden Oaks
Suite 210
Rochester, NY 14625

ISSUE NOTIFICATION

The projected patent number and issue date are specified above. The patent will issue electronically. The electronically issued patent is the official patent grant pursuant to 35 U.S.C. § 153. The patent may be accessed on or after the issue date through Patent Center at <https://patentcenter.uspto.gov/>. The patent will be available in both the public and the private sides of Patent Center. Further assistance in electronically accessing the patent, or about Patent Center, is available by calling the Patent Electronic Business Center at 1-888-217-9197.

The USPTO is implementing electronic patent issuance with a transition period, during which period the USPTO will mail a ceremonial paper copy of the electronic patent grant to the correspondence address of record. Additional copies of the patent (i.e., certified and presentation copies) may be ordered for a fee from the USPTO's Certified Copy Center at <https://certifiedcopycenter.uspto.gov/index.html>. The Certified Copy Center may be reached at (800)972-6382.

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

The Patent Term Adjustment is 233 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

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

Applicant will be able to obtain more detailed information by accessing the Patent Center (<https://patentcenter.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

INVENTOR(s) (Please see PATENT CENTER site <https://patentcenter.uspto.gov> for additional inventors):

Andrei Golman, San Francisco, CA;
Dmitrii Sadykov, Yerevan, ARMENIA;

APPLICANT(s) (Please see PATENT CENTER site <https://patentcenter.uspto.gov> for additional applicants):

Sanas.ai Inc., Palo Alto, CA;

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/228,023	07/31/2023	Andrei Golman	264248.000211	4049
11951	7590	09/09/2025	EXAMINER	
Troutman Pepper Locke LLP (Rochester)			HANG, VU B	
70 Linden Oaks			ART UNIT	PAPER NUMBER
Suite 210			2654	
Rochester, NY 14625			NOTIFICATION DATE	DELIVERY MODE
			09/09/2025	ELECTRONIC

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

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

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

Patents@troutman.com



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APPLICATION NO.	ISSUE DATE	PATENT NO.
18/228,023	09-Sep-2025	12412561

Troutman Pepper Locke LLP (Rochester)
70 Linden Oaks
Rochester, NY 14625

EGRANT NOTIFICATION

Your electronic patent grant (eGrant) is now available, which can be accessed via Patent Center at <https://patentcenter.uspto.gov>

The electronic patent grant is the official patent grant under 35 U.S.C. 153. For more information, please visit <https://www.uspto.gov/electronicgrants>