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16/441,521	06/14/2019	Athanasios Katsamanis	30226-002001	7627

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EXAMINER	
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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Application Number: 16/441,521
Filing Date: 14 Jun 2019
Appellant(s): Katsamanis et al.

J. Robin Rohlicek
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For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 06/17/2021 appealing from the Office action mailed 10/29/2020.

(1) Grounds of Rejection to be Reviewed on Appeal

The Examiner has no comment on the Appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action dated 10/29/2020 from which the appeal is taken is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(2) Response to Argument

Claim(s) 1-14 is/are rejected under 35 U.S.C. 103 as being unpatentable over Raanani et al. (U.S. PG Pub No. 2018/0077286), hereinafter Raanani, in view of Diriye et al. (U.S. PG Pub No. 2019/0327361), hereinafter Diriye.

In the interest of clarity, the Examiner will address Appellant's arguments in an alternate order than that which is presented by the Appellant.

Appellant asserts on pages 6-7, in item 4:

> 4) The Office provides no factual basis for the contention that a "classifier" would be understood to include a "feature vector"
>
> The Applicant has pointed out the technical fallacy that a classifier could in any way be equated with or include a feature vector:
>
> > the classifiers themselves are in no way analogous to a sequence of feature vectors as would be understood by one of ordinary skill in the art having read the Specification at the time of filing. That is, the Broadest Reasonable Interpretation (BRI) of "feature vectors" is not so expansive to encompass the Raanani's classifiers.[6]
>
> The Advisory action does not provide an explanation or any articulation of a BRI that would shed light on how a classifier can be viewed as *including* a feature vectors, stating
>
> > In Raanani [0036-7], the classifier component is shown to use a machine learning algorithm to analyze features and generate a classifier, rather than the classifier itself being trained. Additionally, the classifiers are defined as including a set of features and values, and are not shown in Raanani as being neural networks, but rather, being generated by a neural network. Regarding the processing of the classifiers, the Examiner again refers to Raanani [0041:15-21], where the set of classifiers is analyzed by the call-modeling component to produce the on-call guidance, which is comparable to processing.[7]

The Appellant further states that the quoted statement --the classifiers are defined as including a set of features-- "has no factual basis in paragraphs [0036] or [0037] of the reference…" Thus, the Appellant asserts that, because a classifier cannot be understood to be a feature vector, Raanani does not teach the necessary feature recited in the claim. The Appellant further asserts that there is no factual basis that generating a classifier using feature vectors entails including those feature vectors in the classifier. The Examiner respectfully disagrees with this assertion. As previously stated in the advisory action, Raanani [0036-7] analyzes features to generate a classifier. In lines 14-16 of [0037], Raanani specifically states "Each of the classifiers…can include a set of the features that contributed to the specific outcome." Using the broadest reasonable interpretation of a feature vector as being

a set of feature values, the classifier generated by Raanani, where the classifier includes a set of features, is understood to read on a feature vector as recited in the claims. There is no assertion on the part of the Examiner that the classifier is generated using feature vectors, but rather, that the classifier is itself the feature vector, based on it including a set of features.

Appellant asserts on pages 3-4, in item 1:

> 1) The Office has failed to address all limitations of the claims – "*respective feature vectors*"
>
> The Applicant has previously pointed out that there is nothing to suggest that Raanani discloses that a "*sequence of feature vectors*" is produced from "*successive communication events between multiple parties*" as required by the claim. The Final Office Action alleges that producing the "*sequence of feature vectors*" is found in Raanani because:
>
> > a machine learning algorithm such as a DNN … is used to generate classifiers for different time windows of conversations, i.e. processing…one or more of the successive communication events, where the classifiers include a set of features, i.e. one or more respective feature vectors[1]

The Appellant further states that there has been no patentable weight given to the word "respective", such that each communication event has a respective feature vector, and additionally asserts that Raanani does not teach a feature vector. The Examiner respectfully disagrees with these assertions. The latter assertion regarding a classifier being a feature vector has already been addressed in the response to item 4. Regarding "respective feature vectors", the word "respective" has been given patentable weight. Using the fact that a classifier is interpreted to be a feature vector, Raanani teaches in [0038] that the classifier component generates different classifiers for different time windows in the conversation. Thus, each time window in the conversation has a respective classifier, which includes the features present

within that particular time window, i.e. a respective feature vector. Because there are multiple windows of time within a conversation, there are successive time windows. Because each window of time has its respective classifier, there is, therefore a sequence of classifiers, i.e. sequence of feature vectors. The Examiner would like to further point out that claims 1, 13, and 14 recite “one or more of the successive communication events to produce one or more respective feature vectors”. Thus, based on the claim language, only one feature vector is required in order to form a “sequence of feature vectors” and satisfy the conditions of the claim. The claim does not require successive feature vectors to create the sequence.

Appellant asserts on pages 4-5, in item 2:

2) Raanani does not form the requisite "*respective feature vectors*"

Appellant reiterates previous arguments that there is no association of events with respective feature vectors in Raanani. As previously discussed regarding the arguments in item 1, Raanani teaches in [0038] that the classifier component generates different classifiers for different time windows, i.e. communication events, in the conversation. Thus, each time window in the conversation has a respective classifier, which includes the features present within that particular time window, i.e. respective feature vector.

Appellant asserts on pages 5-6, in item 3:

> 3) The Office has failed to address all limitations of the claims – "*processing the sequence of feature vectors ... to generate the recommendation*"
>
> The Applicant has previously pointed out that the claim requires "*processing the sequence of feature vectors with a second neural network to generate the recommendation*" and that the reference does not disclose such a processing of a sequence as alleged by the Office. In response, the Advisory Action states:
>
> "Raanani [0041:15-21][5] recites the call-modeling component performing analysis of a set of classifiers to provide on-call guidance.[5]

The Appellant states the processing of a sequence of feature vectors is not addressed. The Examiner respectfully disagrees with this assertion. This argument has its basis in the previously addressed arguments: without feature vectors, there can be no respective feature vectors forming a sequence of feature vectors. And without a sequence of feature vectors, the sequence cannot be processed. The Examiner has previously addressed these arguments, and will briefly reiterate them here for continuity. Raanani teaches a classifier, i.e. feature vectors [0037], that is generated for a particular time window, i.e. respective feature vector, where a conversation has multiple windows of time, resulting in successive time windows and, therefore, a sequence of classifiers, i.e. sequence of feature vectors [0038]. Raanani then recited in [0041] that the call modeling component analyzes the set of classifiers, i.e. sequence of feature vectors, to determine on-call guidance. Thus, Raanani does teach the processing of a sequence of feature vectors.

Appellant asserts on page 7, that Raanani does not teach an association of dialog turns with respective feature vectors. The Examiner respectfully disagrees

with this assertion. Raanani teaches in [0025] that a conversation can be ongoing between a customer and a representative, and further teaches in [0038] that the conversation can be broken down into different time windows, i.e. communication events, where each successive time window includes different parts of the conversation between the customer and representative, i.e. conversational turns in a dialog. Each time window has generated from it a classifier, i.e. respective feature vector.

Appellant asserts on page 8, that Raanani does not disclose the generating of a recommendation with a sequence of separate dialogs as input. The Examiner respectfully disagrees with this assertion. Raanani teaches in [0035] that historical call data includes conversations plural, i.e. separate dialogs, which can be used for offline analysis. The offline analysis component generates features using the call data [0036], and can generate classifiers from the features, i.e. feature vectors [0037]. The Examiner notes that the offline analysis is not, in fact, training as suggested by the Appellant, but is the creation of classifiers, i.e. feature vectors, from historical call data that can be saved for later use by the real-time analysis component (see [0039-40]). Thus, classifiers, i.e. feature vectors, are generated

from conversations in historical call data, i.e. successive communication events, and the set of classifiers are further analyzed to determine on-call guidance [0040].

Hence, for the reasons mentioned above, these rejections are maintained.

(3) Conclusion

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/NICOLE A K SCHMIEDER/
Examiner, Art Unit 2659

Conferees:

/PIERRE LOUIS DESIR/
Supervisory Patent Examiner, Art Unit 2659

/RICHEMOND DORVIL/
Supervisory Patent Examiner, Art Unit 2658

Requirement to pay appeal forwarding fee. In order to avoid dismissal of the instant appeal in any application or ex parte reexamination proceeding, 37 CFR 41.45 requires payment of an appeal forwarding fee within the time permitted by 37 CFR 41.45(a), unless appellant had timely paid the fee for filing a brief required by 37 CFR 41.20(b) in effect on March 18, 2013.