

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference GENES-218		FOR FURTHER ACTION See Form PCT/IPEA/416
International application No. PCT/US2022/054294	International filing date (<i>day/month/year</i>) 29 December 2022 (29.12.2022)	Priority date (<i>day/month/year</i>) 29 December 2021 (29.12.2021)
International Patent Classification (IPC) or both national classification and IPC IPC: G06F 16/45 (2023.01); G06F 16/835 (2023.01); G06F 16/35 (2023.01) CPC: G06F 16/45 ; G06F 16/835 ; G06F 16/35		
Applicant GENESYS CLOUD SERVICES, INC.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of <u> 3 </u> sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. ☒ a total of <u> 18 </u> sheets, as follows: ☒ sheets of the description, claims and/or drawings which have been amended and/or sheets containing rectifications authorized by this Authority, unless those sheets were superseded or cancelled, and any accompanying letters (see Rules 46.5, 66.8, 70.16, 91.2, and Section 607 of the Administrative Instructions). ☐ sheets containing rectifications, where the decision was made by this Authority not to take them into account because they were not authorized by or notified to this Authority at the time when this Authority began to draw up this report, and any accompanying letters (Rules 66.4bis, 70.2(e), 70.16 and 91.2). ☐ superseded sheets and any accompanying letters, where this Authority either considers that the superseding sheets contain an amendment that goes beyond the disclosure in the international application as filed, or the superseding sheets were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in item 4 of Box No. I and the Supplemental Box (see Rule 70.16(b)). b. ☐ a separate electronic file containing a sequence listing (<i>sent to the International Bureau only</i>). 4. This report contains indications relating to the following items: ☒ Box No. I Basis of the report ☐ Box No. II Priority ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability ☐ Box No. IV Lack of unity of invention ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability: citations and explanations supporting such statement ☐ Box No. VI Certain documents cited ☐ Box No. VII Certain defects in the international application ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 30 October 2023 (30.10.2023)	Date of completion of this report 09 May 2024 (09.05.2024)
Name and mailing address of the IPEA/US Commissioner for Patents Mail Stop PCT, Attn: IPEA/US P.O. Box 1450 Alexandria, VA 22313-1450, United States of America	Authorized officer AHMED SABA
Facsimile No. (571)273-8300	Telephone No.

Box No. I Basis of the report

1. With regard to the
- language**
- , this report is based on:



the international application in the language in which it was filed.



a translation of the international application into _____ which is the language of a translation furnished for the purposes of:



international search (Rules 12.3(a) and 23.1(b)).



publication of the international application (Rule 12.4(a)).



international preliminary examination (Rules 55.2(a) and/or 55.3(a) and (b)).

2. With regard to the
- elements**
- of the international application, this report is based on (
- replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*
-):



the international application as originally filed/furnished, or



the description:

pages _____ as originally filed/furnished.

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____



the claims:

Nos. _____ as originally filed/furnished.

Nos.* _____ as amended (together with any statement) under Article 19

Nos.* _____ received by this Authority on _____



the drawings:

pages _____ as originally filed/furnished.

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____



a sequence listing - see Supplemental Box Relating to Sequence Listing.

- 3.
- ☐
- The amendments have resulted in the cancellation of:



the description, pages _____



the claims, Nos. _____



the drawings, sheets/figs _____

the sequence listing (*specify*): _____

- 4.
- ☐
- This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since either they are considered to go beyond the disclosure as filed, or they were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in the Supplemental Box (Rules 70.2(c) and (c-bis)):



the description, pages _____



the claims, Nos. _____



the drawings, sheets/figs _____

the sequence listing (*specify*): _____

- 5.
- ☐
- This report has been established:

taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rules 66.1(d-bis) and 70.2(e)).without taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91(Rules 66.4bis and 70.2(e)).

6. With regard to top-up searches (Rules 66.1ter and 70.2(f)):

A top-up search was carried out by this Authority on 09 May 2024 (09.05.2024)

Additional relevant documents have been discovered during the top-up search.



No top-up search was carried out by this Authority because it would serve no useful purpose.

- 7.
- ☐
- Supplementary international search report(s) from Authority(ies) _____ has/ have been received and taken into account in establishing this report (Rule 45bis.8(b) and (c)).

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US2022/054294

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1</u>	YES
	Claims		NO

2. Citations and explanations(Rule 70.7)

----- EXPLANATION -----

Validity of the priority claim

30 October 2023 (30.10.2023)

**BEFORE THE INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY
UNITED STATES PATENT AND TRADEMARK OFFICE**

In re International Application No: PCT/US2022/054294

International Filing Date: 29 December 2022

Attorney Docket Number: GENES-218

LETTER ACCOMPANYING AMENDMENT UNDER ARTICLE 34

The International Preliminary Examining Authority
United States Patent & Trademark Office
Mail Stop PCT, Attn: IPEA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir or Madam:

In response to the Notification of Transmittal of the International Search Report and Written Opinion of the International Searching Authority (hereinafter “Written Opinion”), Applicant submits herewith this letter accompanying Applicant’s Amendment Under Article 34 (hereinafter “Amendment”) and a Chapter II Demand for International Preliminary Examination (hereinafter “Demand”). The Amendment consists of replacement sheets for pages 27-30 in the original application. The Amendment does not contain any new subject matter nor does it go beyond the disclosure as originally filed. This letter provides the statements required under Article 66.8(a) including a description of the Amendment and Applicant’s remarks in response to the Written Opinion dated 12 April 2023. Applicant respectfully requests reconsideration of the application in view thereof. Applicant also submits the following documents herewith:

The **Statement under Article 66.8(a)**, which begins on page 2;

The **Appendix A: Marked-up Amended Claims**, which begins on page 8; and

The **Amendment Under Article 34**, which is filed separately herewith.

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STATEMENT UNDER ARTICLE 66.8(a)

Claim Status, Description of Amendments, and Basis of Amendments

The status of each claim, the differences between the claims as originally filed and the amended claims submitted herewith, and the basis for each amendment submitted herewith are as follows.

Claim 1 has been amended. The differences between original claim 1 and amended claim 1 and the basis for the amendment are as follows. Claim 1 has been amended to recite “wherein the global confidence classifier model is trained based on a confidence classifier that uses at least five input features” and “wherein the at least five input features comprise a first alignment score between the user query and a corresponding document and a second alignment score between the corresponding document and the user query.” The basis for this amendment is found at least at paragraphs [0008], [0009], [0019], [0020], and [0087]-[0090] of the originally filed application.

Claims 2-4 are unchanged.

Claim 5 has been canceled.

Claim 6 has been amended. The differences between original claim 6 and amended claim 6 and the basis for the amendment are as follows. Claim 6 has been amended to change the claim dependency from claim 5 to claim 1.

Claims 7-12 are unchanged.

Claim 13 has been amended. The differences between original claim 13 and amended claim 13 and the basis for the amendment are as follows. Claim 13 has been amended to recite “wherein the global confidence classifier model is trained based on a confidence classifier that uses at least five input features” and “wherein the at least five input features comprise a first alignment score between the user query and a corresponding document and a second alignment score between the user query and the corresponding document.” The basis for this amendment is found at least at paragraphs [0008], [0009], [0019], [0020], and [0087]-[0090] of the originally filed application.

Claims 14 and 15 are unchanged.

Claim 16 has been canceled.

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Claim 17 has been amended. The differences between original claim 17 and amended claim 17 and the basis for the amendment are as follows. Claim 17 has been amended to change the claim dependency from claim 16 to claim 13.

Claims 18-20 are unchanged.

Claim 21 is new. Claim 21 recites “[o]ne or more non-transitory machine-readable storage media comprising a plurality of instructions stored thereon that, in response to execution by a computing system, causes the computing system to” “receive a user query from a contact center client communicating with a knowledge-only bot of the system,” “perform feature extraction on the user query by converting query words of the user query into a numerical vector representation of the user query,” “identify a subset of documents most likely to be responsive to the user query,” “re-rank the subset of documents most likely to be responsive to the user query based on the feature extraction and a global confidence classifier model,” “wherein the global confidence classifier model is trained based on a confidence classifier that uses at least five input features,” and “wherein the at least five input features comprise a first alignment score between the user query and a corresponding document, a second alignment score between the user query and the corresponding document, a cosine similarity score between the user query and the corresponding document, a document score from a document classifier, and a word overlap score that calculates a number of n-grams that are similar between the user query and the corresponding document.” The basis for this amendment is found at least at paragraphs [0008], [0009], [0019], [0020], [0033], [0045], [0069], and [0087]-[0090] of the originally filed application.

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Remarks

The Written Opinion argues that claims 1-4, 7-15, and 18-20 lack novelty under PCT Article 33(2) as allegedly being anticipated by U.S. Publication No. 2019/0042988 to Telepathy Labs, Inc. (hereinafter “Telepathy”). The Written Opinion also argues that claims 5 and 16 lack an inventive step under PCT Article 33(3) as allegedly being obvious over Telepathy in view of U.S. Publication No. 2021/0089942 to International Business Machines Corporation (hereinafter “IBM”).

Independent Claim 1 and Dependent Claims 2-12

The Written Opinion alleges that independent claim 1 lacks novelty over Telepathy. See Written Opinion, p. 6. As indicated above, independent claim 1 has been amended to recite further features (including features similar to those of dependent claims 5 and 6) and/or to improve its form. More specifically, independent claim 1 has been amended to recite “wherein the global confidence classifier model is trained based on a confidence classifier that uses at least five input features.” The Applicant respectfully submits that the Telepathy fails to teach at least those amended features of independent claim 1. In fact, the Written Opinion concedes that Telepathy fails to teach or suggest “wherein the global confidence classifier model is trained based on a confidence classifier that uses at least five input features” as recited in amended claim 1. See Written Opinion, p. 7.

Independent claim 1 has been further amended to recite “wherein the at least five input features comprise a first alignment score between the user query and a corresponding document and a second alignment score between the corresponding document and the user query.” The Applicant respectfully submits that the prior art of record fails to teach or suggest at least those amended features of independent claim 1. Further, as recognized with respect to dependent claim 6, the Written Opinion notes:

In the closest prior art TELEPATHY discloses using features as inputs but fails to specify the number of input or types of features. In the next closest art IBM discloses a classifier using five classes in inputs but fails to disclose wherein the features include any further claim language as disclosed by the applicant. Due to the infinite number of ways data can be taken as input into a classifier and the previous disclosure of input features from TELEPATHY and IBM,

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it would not be obvious to one skilled in the art to combine those and any other references to cover the claim as disclosed by the applicant.

See Written Opinion, p. 7, emphasis added. The Applicant respectfully submits that the prior art of record fails to teach at least those amended features of independent claim 1. For at least those reasons, the Applicant respectfully submits that independent claim 1 possesses both novelty and an inventive step over the cited art.

Each of claims 2-12 depends either directly or indirectly from independent claim 1, and is submitted to possess novelty and an inventive step over the cited art for at least the reasons set forth in support of the patentability of independent claim 1. Moreover, further reasons support the patentability of those claims.

Independent Claim 13 and Dependent Claims 14-20

The Written Opinion alleges that independent claim 13 lacks novelty over Telepathy. See Written Opinion, p. 6. As indicated above, independent claim 13 has been amended to recite further features (including features similar to those of dependent claims 16 and 17) and/or to improve its form. More specifically, independent claim 13 has been amended to recite “wherein the global confidence classifier model is trained based on a confidence classifier that uses at least five input features.” The Applicant respectfully submits that the Telepathy fails to teach at least those amended features of independent claim 13. In fact, the Written Opinion concedes that Telepathy fails to teach or suggest “wherein the global confidence classifier model is trained based on a confidence classifier that uses at least five input features” as recited in amended claim 13. See Written Opinion, p. 7.

Independent claim 13 has been further amended to recite “wherein the at least five input features comprise a first alignment score between the user query and a corresponding document and a second alignment score between the user query and the corresponding document.” The Applicant respectfully submits that the prior art of record fails to teach or suggest at least those amended features of independent claim 13. Further, as recognized with respect to dependent claim 17, the Written Opinion notes:

In the closest prior art TELEPATHY discloses using features as inputs but fails to specify the number of input or types of features.

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In the next closest art IBM discloses a classifier using five classes in inputs but fails to disclose wherein the features include any further claim language as disclosed by the applicant. Due to the infinite number of ways data can be taken as input into a classifier and the previous disclosure of input features from TELEPATHY and IBM, it would not be obvious to one skilled in the art to combine those and any other references to cover the claim as disclosed by the applicant.

See Written Opinion, p. 7, emphasis added. The Applicant respectfully submits that the prior art of record fails to teach at least those amended features of independent claim 13. For at least those reasons, the Applicant respectfully submits that independent claim 13 possesses both novelty and an inventive step over the cited art.

Each of claims 14-20 depends either directly or indirectly from independent claim 13, and is submitted to possess novelty and an inventive step over the cited art for at least the reasons set forth in support of the patentability of independent claim 13. Moreover, further reasons support the patentability of those claims.

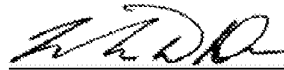
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CONCLUSION

Applicant submits that the novelty and inventive step explanations presented by the Written Opinion are rendered moot in view of the Article 34 Amendment submitted herewith. For at least the foregoing reasons, Applicant submits that the pending claims possess novelty and an inventive step and are patentable over the cited art.

Respectfully submitted,

TAFT STETTINIUS & HOLLISTER LLP

A handwritten signature in black ink, appearing to read 'R. W. Dunn', is written over a horizontal line.

Robin W. Dunn; Reg. No. 67,657
Attorney for Applicant
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Indianapolis, Indiana 46204-2023
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Appendix A
Marked-up Amended Claims

Appendix A to Letter Accompanying Amendment Under Article 34
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MARKED-UP AMENDED CLAIMS

1. (Currently Amended) A method of leveraging a global confidence classifier for information retrieval in contact centers, the method comprising:
 - receiving, by a computing system, a user query from a contact center client communication with a knowledge-only bot of the computing system;
 - performing, by the computing system, feature extraction on the user query by converting query words of the user query into a numerical vector representation of the user query;
 - identifying, by the computing system, a subset of documents most likely to be responsive to the user query; and
 - re-ranking, by the computing system, the subset of documents most likely to be responsive to the user query based on a global confidence classifier model;
 - wherein the global confidence classifier model is trained based on a confidence classifier that uses at least five input features; and
 - wherein the at least five input features comprise a first alignment score between the user query and a corresponding document and a second alignment score between the corresponding document and the user query.
2. (Original) The method of claim 1, further comprising providing, by the computing system, a response to the contact center client based on the re-ranked subset of documents via the knowledge-only bot in response to re-ranking the subset of documents most likely to be responsive to the user query.
3. (Original) The method of claim 1, wherein the global confidence classifier model is trained based on document sets for a plurality of organizations.
4. (Original) The method of claim 3, wherein the global confidence classifier model is trained based on document sets in a plurality of human languages.
5. (Canceled)

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6. (Currently Amended) The method of claim ~~[[5]]~~ 1, wherein the at least five input features comprise a first alignment score between the user query and a corresponding document, a second alignment score between the corresponding document and the user query, a cosine similarity score between the user query and the corresponding document, a document score from a document classifier, and a word overlap score that calculates a number of n-grams that are similar between the user query and the corresponding document.

7. (Original) The method of claim 1, wherein the global confidence classifier model is trained based on a confidence classifier that has a plurality of classes.

8. (Original) The method of claim 1, wherein the global confidence classifier model is a machine learning model.

9. (Original) The method of claim 1, wherein performing the feature extraction on the user query comprises performing the feature extraction on the user query using custom embeddings.

10. (Original) The method of claim 1, further comprising natural language processing, by the computing system, the user query to generate processed data, wherein the natural language processing comprises at least one of cleaning or segmenting data of the user query.

11. (Original) The method of claim 10, wherein performing the feature extraction on the user query comprises performing feature extraction on the processed data.

12. (Original) The method of claim 10, wherein identifying the subset of documents most likely to be responsive to the user query comprises identifying the subset of documents based on the processed data.

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13. (Currently Amended) A system for leveraging a global confidence classifier for information retrieval in contact centers, the system comprising:

at least one processor; and

at least one memory comprising a plurality of instructions stored thereon that, in response to execution by the at least one processor, causes the system to:

receive a user query from a contact center client communicating with a knowledge-only bot of the system;

perform feature extraction on the user query by converting query words of the user query into a numerical vector representation of the user query;

identify a subset of documents most likely to be responsive to the user query; and
re-rank the subset of documents most likely to be responsive to the user query based on the feature extraction and a global confidence classifier model;

wherein the global confidence classifier model is trained based on a confidence classifier that uses at least five input features; and

wherein the at least five input features comprise a first alignment score between the user query and a corresponding document and a second alignment score between the user query and the corresponding document.

14. (Original) The system of claim 13, wherein the plurality of instructions further causes the system to provide a response to the contact center client based on the re-ranked subset of documents via the knowledge-only bot in response to re-ranking the subset of documents most likely to be responsive to the user query.

15. (Original) The system of claim 13, wherein the global confidence classifier model is trained based on document sets for a plurality of organizations in a plurality of human languages.

16. (Canceled)

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17. (Currently Amended) The system of claim ~~[[16]]~~ 13, wherein the at least five input features comprise a first alignment score between the user query and a corresponding document, a second alignment score between the user query and the corresponding document, a cosine similarity score between the user query and the corresponding document, a document score from a document classifier, and a word overlap score that calculates a number of n-grams that are similar between the user query and the corresponding document.

18. (Original) The system of claim 13, wherein the global confidence classifier model is a machine learning model.

19. (Original) The system of claim 13, wherein to perform the feature extraction on the user query comprises to perform the feature extraction on the user query using custom embeddings.

20. (Original) The system of claim 13, wherein the plurality of instructions further causes the system to apply natural language processing to the user query to generate processed data, wherein the natural language processing comprises at least one of cleaning or segmenting data of the user query;

wherein to perform the feature extraction on the user query comprises perform feature extraction on the processed data; and

wherein to identify the subset of documents most likely to be responsive to the user query comprises to identify the subset of documents based on the processed data.

21. (New) One or more non-transitory machine-readable storage media comprising a plurality of instructions stored thereon that, in response to execution by a computing system, causes the computing system to:

receive a user query from a contact center client communicating with a knowledge-only bot of the system;

perform feature extraction on the user query by converting query words of the user query into a numerical vector representation of the user query;

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identify a subset of documents most likely to be responsive to the user query; and
re-rank the subset of documents most likely to be responsive to the user query based on the feature extraction and a global confidence classifier model;

wherein the global confidence classifier model is trained based on a confidence classifier that uses at least five input features; and

wherein the at least five input features comprise a first alignment score between the user query and a corresponding document, a second alignment score between the user query and the corresponding document, a cosine similarity score between the user query and the corresponding document, a document score from a document classifier, and a word overlap score that calculates a number of n-grams that are similar between the user query and the corresponding document.

REPLACEMENT SHEET

WHAT IS CLAIMED IS:

1. A method of leveraging a global confidence classifier for information retrieval in contact centers, the method comprising:

receiving, by a computing system, a user query from a contact center client communication with a knowledge-only bot of the computing system;

performing, by the computing system, feature extraction on the user query by converting query words of the user query into a numerical vector representation of the user query;

identifying, by the computing system, a subset of documents most likely to be responsive to the user query; and

re-ranking, by the computing system, the subset of documents most likely to be responsive to the user query based on a global confidence classifier model;

wherein the global confidence classifier model is trained based on a confidence classifier that uses at least five input features; and

wherein the at least five input features comprise a first alignment score between the user query and a corresponding document and a second alignment score between the corresponding document and the user query.

2. The method of claim 1, further comprising providing, by the computing system, a response to the contact center client based on the re-ranked subset of documents via the knowledge-only bot in response to re-ranking the subset of documents most likely to be responsive to the user query.

3. The method of claim 1, wherein the global confidence classifier model is trained based on document sets for a plurality of organizations.

4. The method of claim 3, wherein the global confidence classifier model is trained based on document sets in a plurality of human languages.

5. (Canceled)

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6. The method of claim 1, wherein the at least five input features comprise a first alignment score between the user query and a corresponding document, a second alignment score between the corresponding document and the user query, a cosine similarity score between the user query and the corresponding document, a document score from a document classifier, and a word overlap score that calculates a number of n-grams that are similar between the user query and the corresponding document.

7. The method of claim 1, wherein the global confidence classifier model is trained based on a confidence classifier that has a plurality of classes.

8. The method of claim 1, wherein the global confidence classifier model is a machine learning model.

9. The method of claim 1, wherein performing the feature extraction on the user query comprises performing the feature extraction on the user query using custom embeddings.

10. The method of claim 1, further comprising natural language processing, by the computing system, the user query to generate processed data, wherein the natural language processing comprises at least one of cleaning or segmenting data of the user query.

11. The method of claim 10, wherein performing the feature extraction on the user query comprises performing feature extraction on the processed data.

12. The method of claim 10, wherein identifying the subset of documents most likely to be responsive to the user query comprises identifying the subset of documents based on the processed data.

13. A system for leveraging a global confidence classifier for information retrieval in contact centers, the system comprising:
at least one processor; and

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at least one memory comprising a plurality of instructions stored thereon that, in response to execution by the at least one processor, causes the system to:

- receive a user query from a contact center client communicating with a knowledge-only bot of the system;
 - perform feature extraction on the user query by converting query words of the user query into a numerical vector representation of the user query;
 - identify a subset of documents most likely to be responsive to the user query; and
 - re-rank the subset of documents most likely to be responsive to the user query based on the feature extraction and a global confidence classifier model;
- wherein the global confidence classifier model is trained based on a confidence classifier that uses at least five input features; and
- wherein the at least five input features comprise a first alignment score between the user query and a corresponding document and a second alignment score between the user query and the corresponding document.

14. The system of claim 13, wherein the plurality of instructions further causes the system to provide a response to the contact center client based on the re-ranked subset of documents via the knowledge-only bot in response to re-ranking the subset of documents most likely to be responsive to the user query.

15. The system of claim 13, wherein the global confidence classifier model is trained based on document sets for a plurality of organizations in a plurality of human languages.

16. (Canceled)

17. The system of claim 13, wherein the at least five input features comprise a first alignment score between the user query and a corresponding document, a second alignment score between the user query and the corresponding document, a cosine similarity score between the user query and the corresponding document, a document score from a document classifier, and a word overlap score that calculates a number of n-grams that are similar between the user query and the corresponding document.

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18. The system of claim 13, wherein the global confidence classifier model is a machine learning model.

19. The system of claim 13, wherein to perform the feature extraction on the user query comprises to perform the feature extraction on the user query using custom embeddings.

20. The system of claim 13, wherein the plurality of instructions further causes the system to apply natural language processing to the user query to generate processed data, wherein the natural language processing comprises at least one of cleaning or segmenting data of the user query;

wherein to perform the feature extraction on the user query comprises perform feature extraction on the processed data; and

wherein to identify the subset of documents most likely to be responsive to the user query comprises to identify the subset of documents based on the processed data.

21. One or more non-transitory machine-readable storage media comprising a plurality of instructions stored thereon that, in response to execution by a computing system, causes the computing system to:

receive a user query from a contact center client communicating with a knowledge-only bot of the system;

perform feature extraction on the user query by converting query words of the user query into a numerical vector representation of the user query;

identify a subset of documents most likely to be responsive to the user query; and

re-rank the subset of documents most likely to be responsive to the user query based on the feature extraction and a global confidence classifier model;

wherein the global confidence classifier model is trained based on a confidence classifier that uses at least five input features; and

wherein the at least five input features comprise a first alignment score between the user query and a corresponding document, a second alignment score between the user query and the corresponding document, a cosine similarity score between the user query and the corresponding

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document, a document score from a document classifier, and a word overlap score that calculates a number of n-grams that are similar between the user query and the corresponding document.