

beer at the same time) is $800/1000=0.8$, and the confidence of (beer->drink) is $800/2000=0.4$.

[0077] Further, a sequence mining algorithm may include, but is not limited to, an Apriori algorithm, a Generalized Sequential Pattern (GSP) algorithm, a FreeSpan algorithm, and a PrefixSpan algorithm. Herein, the Apriori algorithm is a frequent item set algorithm for mining the relevancy rule, and a core idea of the Apriori algorithm is to mine the frequent item set by two stages: candidate set generation and plot downward closed detection. The GSP algorithm is similar to the Apriori algorithm, and a core idea of the GSP algorithm is to generate a candidate sequence by using a large sequence generated during the previous scan every time when a database is scanned, and calculate the support of the candidate sequence while scanning, a candidate sequence that satisfies the support being used as the large sequence for the next scan. The FreeSpan algorithm is a sequence mining algorithm based on pattern projection, and a basic idea of the FreeSpan algorithm is to project a sequence database recursively onto a group of smaller projection databases by using a frequent sequence set currently mined, and increase the subsequence on each projection database respectively. The PrefixSpan algorithm is an improved algorithm of FreeSpan, and a basic idea of the PrefixSpan algorithm is not to consider all frequent subsequences that may appear in projection, only to check a prefix sequence, and then project a corresponding suffix into the projection database.

[0078] In another embodiment of the present application, the acquiring an answer corresponding to the question includes: performing a word segmentation processing on the question to obtain a plurality of words; matching each of the plurality of words with at least one important element corresponding to each of the at least one intention in the preset intention library; and executing, according to a matching result, a corresponding preset branch process to obtain the answer corresponding to the branch process.

[0079] Specifically, it is determined whether each of the plurality of words after the word segmentation processing matches the at least one important element corresponding to each of the at least one intention in the preset intention library. If each of the plurality of words matches the at least one important element corresponding to each of the at least one intention in the preset intention library, the answer corresponding to the question is directly acquired and output. If each of the plurality of words does not match the at least one important element corresponding to each of the at least one intention in the preset intention library, at least one important element for triggering the answer is acquired by

What is claimed is:

1. A question-answer interaction method, comprising:

receiving a question of a user;

5 acquiring an answer corresponding to the question, and acquiring at least one recommendation relevancy between at least one intention in a preset intention library and the question;

determining a recommendation intention according to the at least one recommendation relevancy; and

10 sending the answer to the user, and pushing the recommendation intention to the user.

2. The question-answer interaction method according to claim 1, wherein the acquiring at least one recommendation relevancy between at least one intention in a preset intention library and the question comprises:

15 performing a word segmentation processing on the question to obtain a plurality of words;

matching each of the plurality of words with at least one important element corresponding to each of the at least one intention in the preset intention library; and

20 determining, according to a matching result, the at least one recommendation relevancy between the at least one intention in the preset intention library and the question;

wherein the determining a recommendation intention according to the at least one recommendation relevancy comprises:

25 determining an intention corresponding to a recommendation relevancy exceeding a preset relevancy threshold in the at least one recommendation relevancy as the recommendation intention.

3. The question-answer interaction method according to claim 1, wherein the acquiring at least one recommendation relevancy between at least one intention in a preset intention library and the question comprises:

30 performing a word segmentation processing on the question to obtain a plurality of

words;

matching each of the plurality of words with the at least one important element in a topic model corresponding to each of the at least one intention in the preset intention library, the topic model comprising at least one probability of the at least one important
5 element; and

determining, according to a probability of an important element that matches the plurality of words in the at least one important element, the at least one recommendation relevancy between the at least one intention in the preset intention library and the question.

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4. The question-answer interaction method according to claim 1, wherein the acquiring at least one recommendation relevancy between at least one intention in a preset intention library and the question comprises:

performing a word segmentation processing on the question to obtain a plurality of
15 words;

matching each of the plurality of words with at least one frequent item in a frequent item set in a sequence pattern corresponding to each of the at least one intention in the preset intention library, the frequent item set comprising a confidence of the at least one frequent item; and

20 determining, according to the confidence of a frequent item that matches the plurality of words in the at least one frequent item, the at least one recommendation relevancy between the at least one intention in the preset intention library and the question.

25 5. The question-answer interaction method according to claim 1, wherein the acquiring an answer corresponding to the question comprises:

performing a word segmentation processing on the question to obtain a plurality of words;

30 matching each of the plurality of words with at least one important element corresponding to each of the at least one intention in the preset intention library; and

executing, according to a matching result, a corresponding preset branch process to obtain the answer corresponding to the branch process.

6. The question-answer interaction method according to claim 5, wherein the executing a corresponding preset branch process comprises:

determining whether each of the plurality of words matches the at least one important element corresponding to each of the at least one intention in the preset intention library; and

if each of the plurality of words matches the at least one important element corresponding to one of the at least one intention in the preset intention library, outputting a corresponding answer; or

if each of the plurality of words does not match the at least one important element corresponding to each of the at least one intention in the preset intention library, acquiring at least one important element for triggering the answer by using a context intention reasoning method.

7. The question-answer interaction method according to any one of claims 1 to 6, further comprising:

establishing, according to a plurality of questions raised by each of at least one user recorded in an interaction log, the preset intention library by using a big data analysis method, wherein the preset intention library comprises a corresponding relationship between each of the at least one intention and at least one important element.

8. The question-answer interaction method according to any one of claims 1 to 6, wherein the pushing the recommendation intention to the user comprises:

pushing a question sentence for the recommendation intention to the user; and

the question-answer interaction method further comprises:

sending the answer corresponding to the question sentence for the recommendation intention to the user according to a feedback from the user.

9. The question-answer interaction method according to any one of claims 1 to 6, wherein the pushing the recommendation intention to the user comprises:

pushing a commodity content for the recommendation intention to the user.

10. A question-answer interaction device, comprising:
a receiving module, configured to receive a question of a user;
an acquiring module, configured to acquire an answer corresponding to the question,
and acquire at least one recommendation relevancy between at least one intention in a
5 preset intention library and the question;
a determining module, configured to determine a recommendation intention
according to the at least one recommendation relevancy; and
a sending module, configured to send the answer to the user, and push the
recommendation intention to the user.

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11. The question-answer interaction device according to claim 10, wherein the
acquiring module comprises:

a processing unit, configured to perform a word segmentation processing on the
question to obtain a plurality of words;
15 a matching unit, configured to match each of the plurality of words with at least one
important element corresponding to each of the at least one intention in the preset
intention library; and

a determining unit, configured to determine, according to a matching result, the at
least one recommendation relevancy between the at least one intention in the preset
20 intention library and the question;

wherein the determining module is configured to determine an intention
corresponding to a recommendation relevancy exceeding a preset relevancy threshold in
the at least one recommendation relevancy as the recommendation intention.

25 12. The question-answer interaction device according to claim 10, wherein the
acquiring module comprises:

a processing unit, configured to perform a word segmentation processing on the
question to obtain a plurality of words;

a matching unit, configured to match each of the plurality of words with the at least
30 one important element in a topic model corresponding to each of the at least one intention
in the preset intention library, the topic model comprising at least one probability of the at
least one important element, and

a determining unit, configured to determine, according to a probability of an important element that matches the plurality of words in the at least one important element, the at least one recommendation relevancy between the at least one intention in the preset intention library and the question.

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13. The question-answer interaction device according to claim 10, wherein the acquiring module comprises:

a processing unit, configured to perform a word segmentation processing on the question to obtain a plurality of words;

10 a matching unit, configured to match each of the plurality of words with at least one frequent item in a frequent item set in a sequence pattern corresponding to each of the at least one intention in the preset intention library, the frequent item set comprising a confidence of the at least one frequent item, and

15 a determining unit, configured to determine, according to the confidence of a frequent item that matches the plurality of words in the at least one frequent item, the at least one recommendation relevancy between the at least one intention in the preset intention library and the question.

20 14. The question-answer interaction device according to claim 10, wherein the acquiring module comprises:

a processing unit, configured to perform a word segmentation processing on the question to obtain a plurality of words;

25 a matching unit, configured to match each of the plurality of words with at least one important element corresponding to each of the at least one intention in the preset intention library; and

an executing unit, configured to execute, according to a matching result, a corresponding preset branch process to obtain the answer corresponding to the branch process.

30 15. The question-answer interaction device according to claim 14, wherein the executing unit is configured to determine whether each of the plurality of words matches the at least one important element corresponding to each of the at least one intention in

the preset intention library; and

if each of the plurality of words matches the at least one important element corresponding to one of the at least one intention in the preset intention library, output a corresponding answer; or

5 if each of the plurality of words does not match the at least one important element corresponding to each of the at least one intention in the preset intention library, acquire at least one important element for triggering the answer by using a context intention reasoning method.

10 16. The question-answer interaction device according to any one of claims 10 to 15, further comprising:

a library establishing module, configured to establish, according to a plurality of questions raised by each of at least one user recorded in an interaction log, the preset intention library by using a big data analysis method, wherein the preset intention library
15 comprises a corresponding relationship between each of the at least one intention and at least one important element.

17. The question-answer interaction device according to any one of claims 10 to 15, wherein the sending module is configured to push a question sentence for the
20 recommendation intention to the user, and send the answer corresponding to the question sentence for the recommendation intention to the user according to a feedback from the user.

18. The question-answer interaction device according to any one of claims 10 to 15,
25 wherein the sending module is configured to push a commodity content for the recommendation intention to the user.

19. A computer device, comprising:
a memory;
30 a processor; and
an executable instruction stored in the memory and executed in the processor,
wherein when the executable instruction is executed by the processor, the processor

performs a question-answer interaction method according to any one of claims 1 to 9.

20. A computer readable storage medium storing an executable instruction that,
when executed by a processor, causes the processor to perform a question-answer
5 interaction method according to any one of claims 1 to 9.