SUMMARY

4a. In an aspect, the present disclosure refers to a method for recommending an item to a user, comprising:

receiving, by a server, a session request associated with a first session;

retrieving, by the server, information relating to the first session based on the received session request;

identifying, by the server, a first plurality of items that is selected or ordered by the user in a second session that is previous to the first session, wherein

the identification of the first plurality of items is from data relating to a plurality of orders or selections made by the user, and

the identification of the first plurality of items is based on the retrieved information relating to the first session;

computing, by the server, a score for each item of a second plurality of items, wherein

the second plurality of items is selected or ordered by a plurality of users, and

the computed score indicates a measure of similarity between the identified first plurality of items and a corresponding item of the second plurality of items; and

recommending, by the server, one or more items of the second plurality of items to the user during the first session based on the computed score, wherein the recommendation of the one or more items is in real-time and in response to the plurality of orders or selections made by the user.

4b. In an aspect, the present disclosure refers to a system for recommending an item to a user, comprising:

at least one processor; and

at least one memory including computer program code;

the at least one memory and the computer program code configured to, with the at least one processor, cause the system at least to:

receive a session request associated with a first session;

retrieve information relating to the first session based on the received session request;

identify a first plurality of items that is selected or ordered by the user in a second session that is previous to the first session, wherein

the identification of the first plurality of items is from data relating to a plurality of orders or selections made by the user, and

the identification of the first plurality of items is based on the retrieved information relating to the first session;

compute a score for each item of a second plurality of items, wherein

the second plurality of items is selected or ordered by a plurality of users, and

the computed score indicates a measure of similarity between the identified first plurality of items and a corresponding item of the second plurality of items; and recommend one or more items of the second plurality of items to the user during the first session based on the computed score, wherein the recommendation of the one or more items is in real-time and in response to the plurality of orders or selections made by the user.

5. According to a first example of the present disclosure, there is provided a method for recommending an item to a user, the method comprising: identifying, by a server, a first plurality of items, the first plurality of items being a plurality of items that are selected or ordered by a user, the identification based on data relating to a plurality of orders or selections made by the user; computing, by the server, a score for each item of a second plurality of items, the second plurality of items being a plurality of items that are selected or ordered by a plurality of users, the score indicating a measure of similarity between the first plurality of items and each item of the second plurality of items; and recommending, by the server, one or more items of the second plurality of items to the user based on the computed

score, the recommendation being made in real-time and in response to the plurality of orders or selections made by the user.

6. According to a second example of the present disclosure, there is provided a system for recommending an item to a user, comprising: at least one processor; and at least one memory including computer program code; the at least one memory and the computer program code configured to, with the at least one processor, cause the system at least to: identify a first plurality of items, the first plurality of items being a plurality of items that are selected or ordered by a user, the identification based on data relating to a plurality of orders or selections made by the user; compute a score for each item of a second plurality of items, the second plurality of items being a plurality of items that are selected or ordered by a plurality of users, the score indicating a measure of similarity between the first plurality of items and each item of the second plurality of items; and recommend one or more items of the second plurality of items to the user based on the computed score, the recommendation being made in real-time and in response to the plurality of orders or selections made by the user.

CLAIMS

What is claimed is:

1. A method for recommending an item to a user, comprising:

receiving, by a server, a session request associated with a first session;

retrieving, by the server, information relating to the first session based on the received session request;

identifying, by the server, a first plurality of items that is selected or ordered by the user in a second session that is previous to the first session, wherein

the identification of the first plurality of items is from data relating to a plurality of orders or selections made by the user, and

the identification of the first plurality of items is based on the retrieved information relating to the first session;

computing, by the server, a score for each item of a second plurality of items, wherein

the second plurality of items is selected or ordered by a plurality of users, and

the computed score indicates a measure of similarity between the identified first plurality of items and a corresponding item of the second plurality of items; and

recommending, by the server, one or more items of the second plurality of items to the user during the first session based on the computed score, wherein the recommendation of the one or more items is in real-time and in response to the plurality of orders or selections made by the user.

2. The method of claim 1, further comprising:

receiving, in real time when the second plurality of items are ordered or selected, data relating to the second plurality of items, the data indicating a respective time at which each item of the second plurality of items is selected or ordered, and indicating a respective user identifier associated with each item; and

storing the received data in a database as historical data, the historical data being sorted based on the indicated time and user identifier.

3. The method of claim 2, further comprising:

generating an item embedding based on the historical data; and

training the item embedding based on an item2vec model.

4. The method of any one of the preceding claims, further comprising:

receiving, in real time when the first plurality of items are ordered or selected, the data in a real time stream when the plurality of orders or selections are made by the user, the data indicating a respective time at which each item of the first plurality of items is selected or ordered, and indicating a respective user identifier associated with each item; and

storing the received data in the database, the stored data being sorted based on the indicated time and user identifier.

5. The method of claim 4, wherein identifying the first plurality of items further comprises:

identifying, from the stored data, the first plurality of items that are selected or ordered by the user based on a user identifier associated with the user.

6. The method of claim 4, further comprising:

updating the historical data based on the stored data;

generating an updated item embedding based on the updated historical data; and

training the updated item embedding based on an item2vec model.

7. The method of claim 2, wherein computing the score further comprises:

generating, for each respective item of the first plurality of items, a respective first cluster comprising a mapping of the respective item with one or more other items from the second plurality of items that are similar to the respective item;

generating, by the server, a second cluster comprising a mapping of the first plurality of items; and

computing the score for each of the one or more other items, the computation based on a processing of the plurality of first clusters and the second cluster.

8. The method of claim 7, wherein the processing further comprises:

generating a first matrix based on the plurality of first clusters, and a second matrix based on the second cluster;

computing a dot product between the first and second matrix to generate a similarity matrix; and

performing row product operation on the similarity matrix to obtain the computed scores.

9. The method of any one of the preceding claims, wherein recommending the one or more items further comprises ranking each item of the one or more other items based on the computed score, and selecting the one or more items based on the ranking.

10. A system for recommending an item to a user, comprising:

at least one processor; and

at least one memory including computer program code;

the at least one memory and the computer program code configured to, with the at least one processor, cause the system at least to:

receive a session request associated with a first session;

retrieve information relating to the first session based on the received session request;

identify a first plurality of items that is selected or ordered by the user in a second session that is previous to the first session, wherein

the identification of the first plurality of items is from data relating to a plurality of orders or selections made by the user, and

the identification of the first plurality of items is based on the retrieved information relating to the first session;

compute a score for each item of a second plurality of items, wherein

the second plurality of items is selected or ordered by a plurality of users, and

the computed score indicates a measure of similarity between the identified first plurality of items and a corresponding item of the second plurality of items; and

recommend one or more items of the second plurality of items to the user during the first session based on the computed score, wherein the recommendation of the one or more items is in real-time and in response to the plurality of orders or selections made by the user.

11. The system of claim 10, further configured to:

receive, in real time when the second plurality of items are ordered or selected, data relating to the second plurality of items, the data indicating a respective time at which each item of the second plurality of items is selected or ordered, and indicate a respective user identifier associated with each item; and

store the received data in a database as historical data, the historical data being sorted based on the indicated time and user identifier.

12. The system of claim 11, further configured to:

generate an item embedding based on the historical data; and

train the item embedding based on an item2vec model.

13. The system of any one of claims 10 - 12, further configured to:

receive, in real time when the first plurality of items are ordered or selected, the data in a real time stream when the plurality of orders or selections are made by the user, the data indicating a respective time at which each item of the first plurality of items is selected or ordered, and indicating a respective user identifier associated with each item; and

store the received data in the database, the stored data being sorted based on the indicated time and user identifier.

14. The system of claim 13, wherein identifying the first plurality of items further comprises:

identifying, from the stored data, the first plurality of items that are selected or ordered by the user based on a user identifier associated with the user.

15. The system of claim 13, further configured to:

update the historical data based on the stored data;

generate an updated item embedding based on the updated historical data; and

train the updated item embedding based on an item2vec model.

16. The system of claim 11, wherein computing the score further comprises:

generating, for each respective item of the first plurality of items, a respective first cluster comprising a mapping of the respective item with one or

more other items from the second plurality of items that are similar to the respective item;

generating a second cluster comprising a mapping of the first plurality of items; and

computing the score for each of the one or more other items, the computation based on a processing of the plurality of first clusters and the second cluster.

17. The system of claim 16, wherein the processing further comprises:

generating a first matrix based on the plurality of first clusters, and a second matrix based on the second cluster;

computing a dot product between the first and second matrix to generate a similarity matrix; and

performing row product operation on the similarity matrix to obtain the computed scores.

18. The system of any one of claims 10 - 17, wherein recommending the one or more items further comprises ranking each item of the one or more other items based on the computed score, and selecting the one or more items based on the ranking.

19. The method of claim 1, wherein

the retrieved information includes an identifier associated with the user and context information associated with the user, and

the identification of the first plurality of items is further based on the identifier associated with the user and the context information associated with the user.

20. The system of claim 1, wherein

the retrieved information includes an identifier associated with the user and context information associated with the user, and

the identification of the first plurality of items is further based on the identifier associated with the user and the context information associated with the user.