

Claims

1. A business task execution method, comprising the following steps of:

clustering a plurality of non-label data corresponding to a business task of a target user, so as to determine at least two clustering center points;

5 determining respective weights corresponding to a plurality of label data of a joint user according to the at least two clustering center points and the plurality of non-label data, wherein the plurality pieces of label data correspond to the business task;

constructing a joint learning model according to the plurality of label data of each joint user and the respective weights corresponding to the plurality of label data, wherein

10 the joint learning model is used for executing the business task of the target user-; and determining an initial correlation between any two clustering center points according to any two of the at least two clustering center points and the plurality of non-label data;

15 wherein the step of determining respective similarity weighs corresponding to the at least two clustering center points according to the at least two clustering center points, the target similarity between each of the at least two clustering center points and the plurality of non-label data and the plurality of label data of the joint user comprises:

20 determining a reference correlation between the any two clustering center points according to the any two clustering center points and the plurality of label data of the joint user;

determining a target correlation between the any two clustering center points according to the initial correlation and the reference correlation between the any two clustering center points; and

25 determining the respective similarity weights corresponding to the at least two clustering center points according to the target correlation between the any two clustering center points and the target similarity between each of the at least two clustering center points and the plurality of non-label data; and

30 ~~2. The method according to claim 1,~~ wherein the step of determining respective weights corresponding to a plurality of label data of a joint user according to the at least two clustering center points and the plurality of non-label data comprises:

determining a target similarity between each of the at least two clustering center points and the plurality of non-label data according to the at least two clustering center points and the plurality of non-label data;

5 determining respective similarity weights corresponding to the at least two clustering center points according to the at least two clustering center points, the target similarity between each of the at least two clustering center points and the plurality of non-label data and the plurality of label data of the joint user; and

10 determining the respective weights corresponding to the plurality of label data of the joint user according to the respective similarity weights corresponding to the at least two clustering center points.—

~~3. The method according to claim 2, further comprising:~~

15 ~~determining an initial correlation between any two clustering center points according to any two of the at least two clustering center points and the plurality of non-label data;~~

~~wherein the step of determining respective similarity weights corresponding to the at least two clustering center points according to the at least two clustering center points, the target similarity between each of the at least two clustering center points and the plurality of non-label data and the plurality of label data of the joint user comprises:~~

20 ~~determining a reference correlation between the any two clustering center points according to the any two clustering center points and the plurality of label data of the joint user;~~

25 ~~determining a target correlation between the any two clustering center points according to the initial correlation and the reference correlation between the any two clustering center points; and~~

~~determining the respective similarity weights corresponding to the at least two clustering center points according to the target correlation between the any two clustering center points and the target similarity between each of the at least two clustering center points and the plurality of non-label data.—~~

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~~42. The method according to claim 31, further comprising:~~

determining a data distribution similarity between the target user and the joint user according to the non-label data, the at least two clustering center points and the respective similarity weights corresponding to the at least two clustering center points;

determining the respective importance of each joint user according to the data distribution similarity between each joint user and the target user; and

adjusting the joint learning model according to the respective importance of each joint user.

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53. The method according to claim 31, wherein the step of determining the respective similarity weights corresponding to the at least two clustering center points according to the target correlation between the any two clustering center points and the target similarity between each of the at least two clustering center points and the plurality of non-label data comprises:

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determining a target correlation matrix corresponding to at least two clustering center points according to the target correlation between the any two clustering center points;

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determining a target similarity vector according to the target similarity between each of the at least two clustering center points and the plurality of non-label data;

correcting the target correlation matrix according to a regularization parameter and an identity matrix to determine a correction correlation matrix;

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determining a similarity weight vector according to the correction correlation matrix and the target similarity vector, wherein the similarity weight vector comprises respective similarity weights corresponding to the at least two clustering center points.

64. The method according to claim 53, wherein the correction correlation matrix is obtained by summing the target correlation matrix and a result of multiplying the regularization parameter by the identity matrix;

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the similarity weight vector is obtained by multiplying the reciprocal of the correction correlation matrix with the similarity vector;

the target correlation is obtained by adding the initial correlation and the reference correlation between the any two clustering center points;

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the target similarity is obtained by averaging the target similarity between each of the plurality of label data and the clustering center points;

the initial correlation is obtained by correcting an average value of respective target similarity product values corresponding to the non-label data based on the target probability distribution weight, and the target similarity product values are obtained by multiplying the target similarity between each of the any two clustering center points

and the non-label data;

the reference correlation is obtained by correcting the average value of respective reference similarity product values corresponding to the label data based on the reference probability distribution weight, and the reference similarity product values are obtained by multiplying the reference similarity between each of the any two clustering center points and the label data;

wherein a sum of the target probability distribution weight and the reference probability distribution weight is equal to 1, and the reference similarity and the target similarity are calculated based on a same kernel function.

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75. The method according to claim 31, wherein each of the joint users shares the target correlation between the any two clustering center points;

the target correlation is determined based on the initial correlation between the any two clustering center points and the reference correlation between the any two clustering center points of each of the joint users.

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86. The method according to claim 21, wherein, the step of determining the respective weights corresponding to the plurality of label data of the joint user according to the respective similarity weights corresponding to the at least two clustering center points comprises:

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for each of the label data of the joint user, weighting and summing the similarity between each of the at least two clustering center points and the label data according to the respective similarity weights corresponding to the at least two clustering center points to determine the weights corresponding to the label data.

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97. The method according to claim 1, wherein the clustering center point is different from any one of the plurality of non-label data.

~~10. A business task execution device, comprising:~~

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~~a clustering module configured to cluster a plurality of non-label data corresponding to a business task of a target user to determine at least two clustering center points;~~

~~a weight determination module configured to determine respective weights of a plurality of label data of a joint user according to the at least two clustering center points~~

and the plurality of non-label data, wherein the plurality of label data correspond to the business task;

- 5 a construction module configured to construct a joint learning model according to the plurality of label data of the joint user and the respective weights of the plurality of label data, wherein the joint learning model is used for executing the business task of the target user.