

This embodiment determines a risk score according to the feature information, the feature information being determined according to the historical transaction track, and the historical transaction track being determined according to the LBS data, thus implementing application of position information to the risk management and control, and improving the accuracy of transaction risk detection.

FIG. 10 is a schematic structural diagram of a transaction risk detection apparatus according to another embodiment of the present invention. In this embodiment, the current transaction account being a single account is used as an example for illustration, and the apparatus is divided into an offline training part and an online application part. The offline running part aims to train, for a member having transactions recently, a feature track set by using a historical track of the member, to find a track set that may represent typical application tracks of the member. In the online application part, during real-time judgment of whether a transaction has a risk, a trained feature track set of the account is retrieved, and the minimum distance between a track of the current transaction and the feature track set is calculated. A smaller distance represents a lower risk of the current transaction, and vice versa.

As shown in FIG. 10, the transaction risk detection apparatus includes: a first determination module 100, an acquisition module 200, a collection sub-module 210, a first acquisition sub-module 220, a reconstruction sub-module 230, an acquisition unit 231, a determination unit 232, a management and control module 300, a second calculation sub-module 310, a first determination sub-module 320, a clustering module 400, a first calculation sub-module 410, a clustering sub-module 420, an extraction module 500, a saving module 600, a positioning module 700, and a second determination module 800. Wherein: the acquisition module 200 includes: the collection sub-module 210, the first acquisition sub-module 220, and the reconstruction sub-module 230; the reconstruction sub-module 230 includes: the acquisition unit 231 and the determination unit 232; the management and control module 300 includes: the second calculation sub-module 310 and the first determination sub-module 320; and the clustering module 400 includes: the first calculation sub-module 410 and the clustering sub-module 420.

Specifically, for each account, the collection sub-module 210 collects LBS data of the account. The LBS data may include position information. Wherein, the LBS data may include an IP (Internet Protocol) address, a WifiMac (local area network physical, an identifier for recognizing a terminal in a local area network) address, GPS (Global

addition, to smoothen the feature track, if two points are too close to each other, the two points may also be directly skipped, for example, point 4 in FIG. 7 is skipped. A red part 71 in FIG. 7 is an extracted feature track.

After the feature track set is obtained, the saving module 600 may save a corresponding relationship between each account and the feature track set. More specifically, the saving module 600 may establish a database, update the feature track set of each account in real time, and save the feature track set corresponding to each account.

The track mining process may be accomplished offline.

When a transaction is detected, the first determination module 100 may acquire a current transaction track of a current transaction account. For example, when the account A initiates a transaction, it may be determined that the current transaction account is the account A.

The positioning module 700 is configured to acquire LBS data of a current transaction and LBS data of a previous transaction of the current transaction account, and acquire, according to the LBS data, position information of the current transaction and position information of the previous transaction.

The second determination module 800 is configured to determine, according to the position information of the current transaction and the position information of the previous transaction, the current transaction track of the current transaction account.

The second calculation sub-module 310 is configured to calculate a spatial distance between the current transaction track and each feature track in the feature track set, and determine the minimum spatial distance as a distance value between the current transaction track and the feature track set. More specifically, the second calculation sub-module 310 may acquire, according to a pre-saved corresponding relationship between accounts and feature track sets, a pre-trained feature track set including M feature tracks of the account A. After the current transaction track and the feature track set are obtained, a spatial distance between the current transaction track and each feature track in the feature track set is calculated, and the minimum spatial distance is determined as a distance value between the current transaction track and the feature track set.

The first determination sub-module 320 is configured to determine a risk score of the current transaction account according to the distance value. More specifically, the first determination sub-module 320 may determine the distance value as the risk score of the current transaction account. For example, the risk score may be the calculated minimum