

WHAT IS CLAIMED IS:

1. A computer-implemented method, comprising:

periodically updating, by a computing device, a cache of the computing device by:

identifying, by the computing device utilizing a predictive model, one or more accounts from a plurality of accounts, the one or more accounts being identified by the predictive model as being likely to be utilized to conduct one or more transactions within a future time period, the predictive model being trained based at least in part on historical transaction data associated with the plurality of accounts, the historical transaction data identifying a number of the plurality of accounts that have historically been utilized within a particular historical time period, wherein the number of the plurality of accounts are determined to have conducted over a threshold percentage of transactions occurring within the particular historical time period;

obtaining, by the computing device from a data store, a portion of the historical transaction data, the portion of the historical transaction data corresponding to transactions conducted utilizing the identified one or more accounts; and

storing, at the cache of the computing device, the portion of the historical transaction data;

receiving, by the computing device over a communications network, an authorization request message for a transaction associated with an account;

determining whether historical transaction data associated with the account is stored in the cache accessible to the computing device;

when the historical transaction data associated with the account is stored in the cache:

retrieving, by the computing device, the historical transaction data associated with the account from the cache; and

performing, by the computing device, at least one operation in response to receiving the authorization request message, the at least one operation utilizing the historical transaction data associated with the account retrieved; and

when the historical transaction data associated with the account is not stored in the cache:

obtaining, by the computing device, the historical transaction data associated with the account from a historical transaction database; and

performing, by the computing device, at least one operation in response to receiving the authorization request message, the at least one operation utilizing the historical transaction data obtained from the historical transaction database;

~~identifying, by the computing device utilizing a predictive model, one or more accounts from a plurality of accounts, the one or more accounts being identified by the predictive model as being likely to be utilized to conduct one or more transactions within a future time period, the predictive model being trained based at least in part on historical transaction data associated with the plurality of accounts;~~

~~obtaining, by the computing device from a data store, a portion of the historical transaction data, the portion of the historical transaction data~~

~~corresponding to transactions conducted utilizing the one or more accounts over a second period of time; and~~

~~storing, at the computing device, the portion of the historical transaction data within the cache.~~

2. The computer-implemented method of claim 1, further comprising updating the historical transaction data associated with the plurality of accounts with transaction data associated with the authorization request message, wherein the predictive model is updated based at least in part on the historical transaction data as updated.

~~3. The computer-implemented method of claim 1, wherein identifying the one or more accounts, obtaining the portion of the historical transaction data, and storing the portion of the historical transaction data, are performed in response to receiving the authorization request message.~~

~~4. The computer-implemented method of claim 1, wherein identifying the one or more accounts, obtaining the portion of the historical transaction data, and storing the portion of the historical transaction data, are performed periodically.~~

53. The computer-implemented method of claim 1, further comprising updating the historical transaction data associated with the plurality of accounts with transaction data of the authorization request message, wherein the one or more accounts are identified from the plurality of accounts subsequent to the historical transaction data being updated with the transaction data.

~~6. The computer-implemented method of claim 1, wherein the historical transaction data identifies a number of the plurality of accounts that have historically been utilized within a particular historical time period.~~

7. — The computer implemented method of claim 6, wherein the number of the plurality of accounts are determined to have conducted over a

~~threshold percentage of transactions occurring within the particular historical time period.~~

84. The computer-implemented method of claim 1, wherein the at least one operation performed when the historical transaction data is stored in the cache or the at least one operation performed when the historical transaction data is not stored in the cache comprises calculating a risk score for the authorization request message.

95. The computer-implemented method of claim 1, wherein the computing device is a processing network computer.

106. A processing network computer, comprising:
a processor; and
a computer readable medium, the computer readable medium comprising code, executable by the processor, for implementing a method comprising:

periodically updating a cache of the processing network computer
by:

identifying, utilizing a predictive model, one or more accounts from a plurality of accounts, the one or more accounts being identified by the predictive model as being likely to be utilized to conduct one or more transactions within a future time period, the predictive model being trained based at least in part on historical transaction data associated with the plurality of accounts, the historical transaction data identifying a number of the plurality of accounts that have historically been utilized within a particular historical time period, wherein the number of the plurality of accounts are determined to have conducted over a threshold percentage of transactions occurring within the particular historical time period;

obtaining, from a data store, a portion of the historical transaction data, the portion of the historical transaction data corresponding to transactions conducted utilizing the identified one or more accounts; and
storing, at the cache of the processing network computer, the portion of the historical transaction data;
receiving an authorization request message for a transaction associated with an account;
determining whether historical transaction data associated with the account is stored in ~~at the cache accessible to the processing network computer;~~
when the historical transaction data associated with the account is stored in the cache:
retrieving the historical transaction data associated with the account from the cache; and
performing at least one operation in response to receiving the authorization request message, the at least one operation utilizing the historical transaction data retrieved; and
when the historical transaction data associated with the account is not stored in the cache:
obtaining the historical transaction data associated with the account from a historical transaction database; and
performing at least one operation in response to receiving the authorization request message, the at least one operation utilizing the historical transaction data obtained from the historical transaction database;

~~identifying, utilizing a predictive model, one or more accounts from a plurality of accounts, the one or more accounts being identified by the predictive model as being likely to be utilized to conduct one or more transactions within a future time period, the predictive model being trained based at least in part on historical transaction data associated with the plurality of accounts;~~
~~obtaining, from a data store, a portion of the historical transaction data, the portion of the historical transaction data corresponding to transactions conducted utilizing the one or more accounts over a second period of time; and~~
~~storing the portion of the historical transaction data within the cache.~~

117. The processing network computer of claim 106, the method further comprising updating the historical transaction data associated with the plurality of accounts with transaction data associated with the authorization request message, wherein the predictive model is updated based at least in part on the historical transaction data as updated.

~~12. The processing network computer of claim 10, wherein identifying the one or more accounts, obtaining the portion of the historical transaction data, and storing the portion of the historical transaction data, are performed in response to receiving the authorization request message.~~

~~13. The processing network computer of claim 10, wherein identifying the one or more accounts, obtaining the portion of the historical transaction data, and storing the portion of the historical transaction data, are performed periodically.~~

148. The processing network computer of claim 106, the method further comprising updating the historical transaction data associated with the plurality of accounts with transaction data of the authorization request message, wherein the one or more accounts are identified from the plurality of accounts

subsequent to the historical transaction data being updated with the transaction data.

~~159.~~ The processing network computer of claim ~~106~~, wherein the predictive model is trained ~~utilize~~ utilizing unsupervised machine learning techniques.

~~16.~~—The processing network computer of claim ~~10~~, wherein the historical transaction data identifies a number of the plurality of accounts that have historically been utilized within a particular historical time period.

~~17.~~—The processing network computer of claim ~~16~~, wherein the number of the plurality of accounts are determined to have conducted over a threshold percentage of transactions occurring within the particular historical time period.

~~18~~10. The processing network computer of claim ~~106~~, wherein the at least one operation performed when the historical transaction data is stored in the cache or the at least one operation performed when the historical transaction data is not stored in the cache comprises calculating a risk score for the authorization request message.