

WHAT IS CLAIMED IS:

1 1. A method comprising:
2 receiving from a plurality of issuers, at a first data processing system,
3 data associated with a first set of individuals, the data including:
4 one or more hashed account identifiers for each individual in the
5 first set of individuals;
6 assigning, by the first data processing system, a unique user identifier
7 (UUID) to each individual in the first set of individuals;
8 storing, by the first data processing system, the data for each individual
9 in the first set of individuals based on the UUID for the respective individual; and
10 transmitting, by the first data processing system to a second data
11 processing system, for each individual in the first set of individuals:
12 the one or more hashed account identifiers for the respective
13 individual;
14 the UUID for the respective individual; and
15 target event data, and
16 wherein the second data processing system collects transaction data
17 associated with each individual in the first set of individuals using at least the hashed
18 account identifiers and the UUID without using personal data associated with the first
19 set of individuals, and applies a predictive model to the transaction data associated
20 with each individual in the first set of individuals in order to calculate an individual-
21 level score associated with the respective individual,
22 wherein the predictive model is configured to determine a predicted
23 default rate for an individual based on a set of transactional attributes in the
24 transaction data associated with the respective individual, and
25 wherein the predictive model is a machine learning model trained with
26 a training sample of transaction data including a known default rate for individuals in
27 the training sample of transaction data and tested with a testing sample of
28 transaction data including a known default rate for individuals in the testing sample of
29 transaction data prior to applying the predictive model to the transaction data
30 associated with each individual in the first set of individuals.

1 2. The method of claim 1, wherein ~~the predictive model is~~
2 ~~configured to determine a predicted default rate for an individual based on a set of~~
3 ~~transactional attributes in the transaction data associated with the respective~~
4 ~~individual, the set of transactional attributes including two or more of:~~
5 a number of months since a first transaction performed by the
6 respective individual;
7 a bank relation associated with the respective individual;
8 a top risk activation indication associated with the respective individual,
9 wherein the top risk activation indication is based on any transactions with high-risk
10 merchants performed over the last twelve months by the respective individual;

11 an average ticket size for all transactions performed over the last
12 twelve months by the respective individual;
13 a share of medical-related transactions out of all transactions
14 performed over the last twelve months by the respective individual;
15 a share of construction-related transactions out of all transactions
16 performed over the last twelve months by the respective individual;
17 a number of months with at least one upscale transaction performed by
18 the respective individual; and
19 an average number of insufficient funds declines per active month
20 experienced by the respective individual.

21 3. The method of claim 1, further comprising:
22 receiving from a plurality of issuers, at the first data processing system,
23 updated data associated with the first set of individuals; and
24 storing, by the first data processing system, the updated data for each
25 individual in the first set of individuals based on the UUID for the respective
26 individual.

1 4. The method of claim 3, further comprising:
2 transmitting, by the first data processing system to the second data
3 processing system, the updated data for each individual in the first set of individuals.

1 5. The method of claim 1, wherein the target event data includes
2 any past default events associated with the respective individual.

1 6. A computer system comprising:
2 a processor;
3 a computer-readable memory containing program instructions that,
4 when executed by the processor, cause the processor to:
5 receive from a plurality of issuers, at a first data processing
6 system, data associated with a first set of individuals, the data including:
7 one or more hashed account identifiers for each
8 individual in the first set of individuals;
9 assign, by the first data processing system, a unique user
10 identifier (UUID) to each individual in the first set of individuals;

11 store, by the first data processing system, the data for each
12 individual in the first set of individuals based on the UUID for the respective
13 individual; and
14 transmit, by the first data processing system to a second data
15 processing system, for each individual in the first set of individuals:
16 the one or more hashed account identifiers for the
17 respective individual;
18 the UUID for the respective individual; and
19 target event data, and
20 wherein the second data processing system collects transaction
21 data associated with each individual in the first set of individuals using at least
22 the hashed account identifiers and the UUID without using personal data
23 associated with the first set of individuals, and applies a predictive model to
24 the transaction data associated with each individual in the first set of
25 individuals in order to calculate an individual-level score associated with the
26 respective individual,
27 wherein the predictive model is configured to determine a
28 predicted default rate for an individual based on a set of transactional
29 attributes in the transaction data associated with the respective individual, and
30 wherein the predictive model is a machine learning model
31 trained with a training sample of transaction data including a known default
32 rate for individuals in the training sample of transaction data and tested with a
33 testing sample of transaction data including a known default rate for
34 individuals in the testing sample of transaction data prior to applying the
35 predictive model to the transaction data associated with each individual in the
36 first set of individuals.

1 7. The computer system of claim 6, wherein ~~the predictive model is~~
2 ~~configured to determine a predicted default rate for an individual based on a set of~~
3 ~~transactional attributes in the transaction data associated with the respective~~
4 ~~individual,~~ the set of transactional attributes including two or more of:
5 a number of months since a first transaction performed by the
6 respective individual;
7 a bank relation associated with the respective individual;

1 a top risk activation indication associated with the respective individual,
2 wherein the top risk activation indication is based on any transactions with high-risk
3 merchants performed over the last twelve months by the respective individual;
4 an average ticket size for all transactions performed over the last
5 twelve months by the respective individual;
6 a share of medical-related transactions out of all transactions
7 performed over the last twelve months by the respective individual;
8 a share of construction-related transactions out of all transactions
9 performed over the last twelve months by the respective individual;
10 a number of months with at least one upscale transaction performed by
11 the respective individual; and

an average number of insufficient funds declines per active month experienced by the respective individual.

8. The computer system of claim 6, wherein the program instructions, when executed by the processor, further cause the processor to: receive from a plurality of issuers, at the first data processing system, updated data associated with the first set of individuals; and store, by the first data processing system, the updated data for each individual in the first set of individuals based on the UUID for the respective individual.

9. The computer system of claim 6, wherein the target event data includes any past default events associated with the respective individual.

10. ~~A method~~The method of claim 1, further comprising: receiving, from the second data processing system, a plurality of scores corresponding one-to-one with ~~a plurality~~the first set of individuals; wherein ~~each score of the plurality of scores is determined by applying a predictive model configured to determine a predicted default rate associated with the individual, and wherein the predictive model is further configured to utilize data associated with the respective individual including values of a first set of transactional attributes, the first set of transactional attributes including two or more of:~~

- ~~a number of months since a first transaction performed by the respective individual;~~
- ~~a bank relation associated with the respective individual;~~
- ~~a top risk activation indication associated with the respective individual, wherein the top risk activation indication is based on any transactions with high-risk merchants performed over the last twelve months by the respective individual;~~
- ~~an average ticket size for all transactions performed over the last twelve months by the respective individual;~~
- ~~a share of medical-related transactions out of all transactions performed over the last twelve months by the respective individual;~~

~~a share of construction-related transactions out of all transactions performed over the last twelve months by the respective individual;~~
~~a number of months with at least one upscale transaction performed by the respective individual; and~~
~~an average number of insufficient funds declines per active month experienced by the respective individual; and~~

storing the plurality of scores in a database;
receiving, from an issuer, a request for a score for an individual;
locating the score for the individual among the plurality of scores in the database; and
sending, to the issuer, the requested score for the individual.

11. The method of claim 10, further comprising:
receiving an updated plurality of scores corresponding one-to-one with the ~~plurality~~ first set of individuals; and
updating the plurality of scores in the database based on the updated plurality of scores.

12. The method of claim 10, wherein the request for the score for the individual includes ~~a~~ the unique user identifier (UUID) associated with the individual, and wherein the score for the individual is stored in the database based on the UUID associated with the individual.

13. The method of claim 10, wherein the receiving, locating, and sending steps are performed within a total of three seconds.

14. The method of claim 10, wherein the plurality of scores are factored into a combined scoring model to obtain a plurality of combined scores corresponding one-to-one with the ~~plurality~~ first set of individuals.

15. ~~A computer system comprising:~~ The computer system of claim 6,
wherein the program instructions, when executed by the processor, further cause the processor to:
~~a processor;~~

5 a computer-readable memory containing program instructions that,
6 when executed by the processor, cause the processor to:

7 ~~receive a plurality of scores corresponding one-to-one with a~~
8 ~~plurality of individuals, wherein each score of the plurality of scores is~~
9 ~~determined by applying a predictive model configured to determine a~~
10 ~~predicted default rate associated with the individual, and wherein the~~
11 ~~predictive model is further configured to utilize data associated with the~~
12 ~~respective individual including values of a first set of transactional attributes,~~
13 ~~the first set of transactional attributes including two or more of:~~

14 ~~a number of months since a first transaction performed by~~
15 ~~the respective individual;~~

16 ~~a bank relation associated with the respective individual;~~

17 ~~a top risk activation indication associated with the~~
18 ~~respective individual, wherein the top risk activation indication is based~~
19 ~~on any transactions with high risk merchants performed over the last~~
20 ~~twelve months by the respective individual;~~

21 ~~an average ticket size for all transactions performed over~~
22 ~~the last twelve months by the respective individual;~~

23 ~~a share of medical-related transactions out of all~~
24 ~~transactions performed over the last twelve months by the respective~~
25 ~~individual;~~

26 ~~a share of construction-related transactions out of all~~
27 ~~transactions performed over the last twelve months by the respective~~
28 ~~individual;~~

29 ~~a number of months with at least one upscale transaction~~
30 ~~performed by the respective individual; and~~

31 ~~an average number of insufficient funds declines per~~
32 ~~active month experienced by the respective individual; and~~

33 store the plurality of scores in a database;

34 receive, from an issuer, a request for a score for an individual;

35 locate the score for the individual among the plurality of scores in the
36 database; and

37 send, to the issuer, the requested score for the individual.

1 16. The computer system of claim 15, wherein the program
2 instructions, when executed by the processor, further cause the processor to:

3 receive an updated plurality of scores corresponding one-to-one with
4 the ~~plurality~~-first set of individuals; and
5 update the plurality of scores in the database based on the updated
6 plurality of scores.

7 17. The computer system of claim 15, wherein the request for the
8 score for the individual includes ~~a~~-the unique user identifier (UUID) associated with
9 the individual, and wherein the score for the individual is stored in the database
10 based on the UUID associated with the individual.

1 18. The computer system of claim 15, wherein the receiving,
2 locating, and sending steps are performed within a total of three seconds.

1 19. The computer system of claim 15, wherein the plurality of scores
2 are factored into a combined scoring model to obtain a plurality of combined scores
3 corresponding one-to-one with the ~~plurality~~-first set of individuals.

1 20. The computer system of claim 19, wherein the requested score
2 for the individual is the combined score associated with the individual.