CLAIMS

1. A computer-implemented method, comprising:

obtaining, by a computer system of an online service site accessible to a plurality of users, a first type of the plurality of users' historical behavior data of a first time period in which the users interacted with the online service site, wherein the first type of the plurality of users' historical behavior data represents respective time durations between when a user sends an instant message and when the user provides a request for a service of the online service site;

calculating, by the computer system of the online service site for each user of the plurality of users, a first metric value for the first type of the plurality of users' historical behavior data over the first time period;

obtaining, by the computer system of the online service site, a second type of the plurality of users' historical behavior data of a second time period that is shorter than the first time period;

calculating, by the computer system of the online service site for each user of the plurality of users, a second metric value for the second type of the plurality of users' historical behavior data over the second time period that is shorter than the first time period;

generating a respective user-specific risk model for each user of the plurality of users who accessed the online service site over the first time period, wherein each respective risk model for each user is based on first historical behavior data of the first type by the user over the first time period and second historical behavior data of the second type of the user over the second time period, wherein generating the user-specific risk model comprises generating a user-specific safety threshold based on historical behavior data of the first type over the first time period that represents a time duration within which the user must initiate the request for the service after sending the online service site the instant message in order for the request for the service to be approved;

receiving, from a particular user of the plurality of users, a request for the service provided by the online service site;

computing a first value for the first type of behavior data by the particular user, including computing a time duration between which the particular user sent the online service site an instant message and when the user provided a request for the service;

computing a second value for the second type of the behavior data by the particular user;

obtaining, by the computer system of the online service site, a user-specific risk model for the particular user, wherein the user-specific risk model for the particular user comprises the user-specific safety threshold computed for the particular user from the first type of the particular user's historical behavior data;

determining, based on the first value for the first type of the behavior data by the particular user, that the particular user did not initiate the request for the service within the time duration specified by the user-specific safety threshold generated for the particular user; and

in response to determining that the particular user did not initiate the request for the service within the time duration specified by the user-specific safety threshold generated for the particular user, rejecting the request for the service.

2. The computer-implemented method of claim 1, wherein the first type of the behavior data by the particular user includes instant messaging data between the particular user and a third-party, and the service is a transaction service.

3. The computer-implemented method of claim 2, wherein the first type of the plurality of users' historical behavior data is at least one of an instant messaging duration between each user and a third party, amount of data exchanged through instant messaging between each user and the third party, and a time from an end of the instant messaging to a start of the transaction service.

4. The computer-implemented method of claim 1, wherein the first type of the plurality of users' historical behavior data of the first time period and the second type of the plurality of users' historical behavior data of the second time period are determined based on the users' identification numbers.

5. The computer-implemented method of claim 1, wherein the first type of the plurality of users' historical behavior data is associated with the users' interactions with a third party for performing the service.

6. The computer-implemented method of claim 1, where in the second time period is a time period within the first time period.

7. The computer-implemented method of claim 1, where in the second time period is a time period more recent than the first time period.

8. The computer-implemented method of claim 1, wherein the user-specific risk model is based on a decision tree or a neural network based on the user-specific safety threshold.

9. A non-transitory, computer-readable medium storing one or more instructions executable by a computer system to perform operations comprising:

obtaining, by the computer system of an online service site accessible to a plurality of users, a first type of the plurality of users' historical behavior data of a first time period in which the users interacted with the online service site, wherein the first type of the plurality of-users' historical behavior data represents respective time durations between when a user sends an instant message and when the user provides a request for a service of the online service site;

calculating, by the computer system of the online service site for each user of the plurality of users, a first metric value for the first type of the plurality of users' historical behavior data over the first time period;

obtaining, by the computer system of the online service site, a second type of the plurality of users' historical behavior data of a second time period that is shorter than the first time period;

calculating, by the computer system of the online service site for each user of the plurality of users, a second metric value for the second type of the plurality of users' historical behavior data over the second time period that is shorter than the first time period;

generating a respective user-specific risk model for each user of the plurality of users who accessed the online service site over the first time period, wherein each respective risk model for each user is based on first historical behavior data of the first type by the user over the first time period and second historical behavior data of the second type of the user over the second time period, wherein generating the user-specific risk model comprises generating a user-specific safety threshold based on historical behavior data of the first type over the first time period that represents a time duration within which the user must initiate the request for the service after sending the online service site the instant message in order for the request for the service to be approved;

receiving, from a particular user of the plurality of users, a request for the service provided by the online service site;

computing a first value for the first type of behavior data by the particular user, including computing a time duration between which the particular user sent the online service site an instant message and when the user provided a request for the service;

computing a second value for the second type of the behavior data by the particular user;

obtaining, by the computer system of the online service site, a user-specific risk model for the particular user, wherein the user-specific risk model for the particular user comprises the user-specific safety threshold computed for the particular user from the first type of the particular user's historical behavior data;

determining, based on the first value for the first type of the behavior data by the particular user, that the particular user did not initiate the request for the service within the time duration specified by the user-specific safety threshold generated for the particular user; and

in response to determining that the particular user did not initiate the request for the service within the time duration specified by the user-specific safety threshold generated for the particular user, rejecting the request for the service.

10. The non-transitory, computer-readable medium of claim 9, wherein the first type of the behavior data by the particular user includes instant messaging data between the particular user and a third-party, and the service is a transaction service.

11. The non-transitory, computer-readable medium of claim 10, wherein the first type of the plurality of users' historical behavior data is at least one of an instant messaging duration between each user and a third party, amount of data exchanged through instant messaging between each user and the third party, and a time from an end of the instant messaging to a start of the transaction service.

12. The non-transitory, computer-readable medium of claim 11, wherein the first type of the plurality of users' historical behavior data of the first time period and the second type of the plurality of users' historical behavior data of the second time period are determined based on the users' identification numbers.

13. The non-transitory, computer-readable medium of claim 9, wherein the first type of the plurality of users' historical behavior data is associated with the users' interactions with a third party for performing the service.

14. The non-transitory, computer-readable medium of claim 9, where in the second time period is a time period within the first time period.

15. The non-transitory, computer-readable medium of claim 9, where in the second time period is a time period more recent than the first time period.

16. The non-transitory, computer-readable medium of claim 9, wherein the user-specific risk model is based on a decision tree or a neural network based on the user-specific safety threshold.

17. A computer-implemented system, comprising:

one or more computers; and

one or more computer memory devices interoperably coupled with the one or more computers and having tangible, non-transitory, machine-readable media storing instructions that, when executed by the one or more computers, perform operations comprising:

obtaining, by the computer-implemented system of an online service site accessible to a plurality of users, a first type of the plurality of users' historical behavior data of a first time period in which the users interacted with the online service site, wherein the first type of the plurality of users' historical behavior data represents respective time durations between when a user sends an instant message and when the user provides a request for a service of the online service site;

calculating, by the computer-implemented system of the online service site for each user of the plurality of users, a first metric value for the first type of the plurality of users' historical behavior data over the first time period;

obtaining, by the computer-implemented system of the online service site, a second type of the plurality of users' historical behavior data of a second time period that is shorter than the first time period;

calculating, by the computer-implemented system of the online service site for each user of the plurality of users, a second metric value for the second type of the plurality of users' historical behavior data over the second time period that is shorter than the first time period;

generating a respective user-specific risk model for each user of the plurality of users who accessed the online service site over the first time period, wherein each respective risk model for each user is based on first historical behavior data of the first type by the user over the

first time period and second historical behavior data of the second type of the user over the second time period, wherein generating the user-specific risk model comprises generating a user-specific safety threshold based on historical behavior data of the first type over the first time period that represents a time duration within which the user must initiate the request for the service after sending the online service site the instant message in order for the request for the service to be approved;

receiving, from a particular user of the plurality of users, a request for the service provided by the online service site;

computing a first value for the first type of behavior data by the particular user, including computing a time duration between which the particular user sent the online service site an instant message and when the user provided a request for the service;

computing a second value for the second type of the behavior data by the particular user;

obtaining, by the computer-implemented system of the online service site, a user-specific risk model for the particular user, wherein the user-specific risk model for the particular user comprises the user-specific safety threshold computed for the particular user from the first type of the particular user's historical behavior data;

determining, based on the first value for the first type of the behavior data by the particular user, that the particular user did not initiate the request for the service within the time duration specified by the user-specific safety threshold generated for the particular user; and

in response to determining that the particular user did not initiate the request for the service within the time duration specified by the user-specific safety threshold generated for the particular user, rejecting the request for the service.

18. The computer-implemented system of claim 17, wherein the first type of the behavior data by the particular user includes instant messaging data between the particular user and a third-party, and the service is a transaction service.

19. The computer-implemented method of claim 1, wherein the time duration is a time duration starting after the particular user sends a last instant message to a seller and ending at or before the particular user provides a request for a transaction service to pay the seller.

20. The computer-implemented method of claim 1, wherein the user-specific risk model for the particular user comprises the user-specific safety threshold computed for the particular user from the first type of the particular user's historical behavior data and the second type of the particular user's historical behavior data, and further comprising:

determining, based on first value for the first type of behavior data and the second value for the second type of the behavior data by the particular user, that the particular user did not initiate the request for the service within the time duration specified by the user-specific safety threshold generated for the particular user.