CLAIMS

What is claimed is:

1. A computer-implemented method, comprising:

constructing, by a computing device having a processor, a relational network that includes a plurality of nodes and established link edges among the plurality of nodes, wherein at least one of the established link edges are established if there is a medium shared between at least two of each of the plurality of nodes, and wherein the shared medium includes common Wi-Fi signals shared by at least two of each of the plurality of nodes;

performing, by the computing device having the processor, cluster discovery based on the relational network to obtain at least one fraud gang included in the relational network, each fraud gang including nodes of the plurality of nodes;

determining, by the computing device having the processor, a weak node from the nodes included in the fraud gang, the weak node being a node whose association with other nodes in the fraud gang meets a weak association criterion, the weak association criterion includes one or more of an average value of weights of all link edges between the node and the other nodes in the fraud gang being smaller than a first threshold value or a sum of weights of all link edges between the node and the other nodes in the fraud gang being smaller than a second threshold value; and

removing, by the computing device having the processor, the weak node from the fraud gang to identify a final target fraud gang.

2. The method according to claim 1, wherein the determining the weak node from the nodes included in the fraud gang comprises:

in response to that a number of link edges between the node and the other nodes in the fraud gang is less than an edge number threshold, determining that the node is the weak node meeting the weak association criterion.

3. The method according to claim 1, wherein the determining the weak node from the nodes included in the fraud gang includes:

in response to that an edge weight of a link edge between a node and another node in the fraud gang is lower than a weight threshold, determining that the node is the weak node meeting the weak association criterion.

4. The method according to claim 1, wherein the removing the weak node from the fraud gang includes one or more of:

removing a gang link edge between different gangs from at least one fraud gang; or

removing some or all weak nodes from each fraud gang.

5. The method of claim 1, further comprising:

after the removing the weak node from the fraud gang and before the identifying the final target fraud gang, performing cluster discovery on the fraud gang in response to that the fraud gang meets a gang subdivision criterion.

6. The method according to claim 5, wherein the gang subdivision criterion includes:

a number of nodes included in the fraud gang is greater than a node number threshold; or

a fraud case concentration value of the fraud gang is lower than a case concentration threshold.

7. The method of claim 1, wherein the constructing the relational network includes determining a link edge between a first node and a second node of the plurality of nodes.

8. The method of claim 1, wherein the shared medium ~~is~~ further includes one or more of a device, a fingerprint, a certificate number, an account number, a Wi-Fi location, or a location-based service account.

9. The method of claim 3, wherein the edge weight of the link edge is determined based on one or more of a number of shared media between the node and the other node or a number of transfer transactions between the node and the other node.

10. A device, comprising:

a network construction module, configured to construct a relational network that

includes a plurality of nodes linked to one another through established link edges, wherein at least one of the established link edges are established if there is a medium shared between at least two of each of the plurality of nodes, and wherein the shared medium includes common Wi-Fi signals shared by at least two of each of the plurality of nodes;

a cluster processing module, configured to perform cluster discovery based on the relational network to obtain at least one fraud gang included in the relational network, each fraud gang includes nodes of the plurality of nodes;

a node determining module, configured to determine a weak node from the nodes included in the fraud gang, the weak node being a node whose association with other nodes of the fraud gang meets a weak association criterion, the weak association criterion includes one or more of an average value of weights of all link edges between the node and the other nodes in the fraud gang being smaller than a first threshold value or a sum of weights of all link edges between the node and the other nodes in the fraud gang being smaller than a second threshold value; and

a pruning processing module, configured to remove the weak node from the fraud gang to identify a final target fraud gang.

11. The device according to claim 10, wherein the node determining module is configured to:

in response to that a number of link edges between the node and the other nodes in the fraud gang is less than an edge number threshold, determine that the node is the weak node meeting the weak association criterion; or

in response to that an edge weight of a link edge between a node and another node in the fraud gang is lower than a weight threshold, determine that the node is the weak node meeting the weak association criterion.

12. The device of claim 11, wherein the edge weight is determined based on one or more of a number of shared media between the node and another node or a number of transfer transactions between the node and the other node.

13. The device according to claim 10, further comprising:

a subdivision module, configured to continue to perform cluster discovery on the fraud gang if the fraud gang meets a gang subdivision criterion after the pruning

processing module has removed the weak node from the fraud gang.

14. A system, comprising:

a memory;

a processor; and

computer instructions stored in the memory, which, when executed by the processor, configures the processor to implement acts including:

constructing a relational network that includes a plurality of nodes linked to one another through established link edges, wherein at least one of the established link edges are established if there is a medium shared between at least two of each of the plurality of nodes, and wherein the shared medium includes common Wi-Fi signals shared by at least two of each of the plurality of nodes;

performing cluster discovery based on the relational network to obtain at least one fraud gang included in the relational network, each fraud gang including nodes of the plurality of nodes;

determining a weak node from the nodes included in the fraud gang, the weak node being a node whose association with other nodes in the fraud gang meets a weak association criterion, the weak association criterion including one or more of an average value of weights of all link edges between the node and the other nodes in the fraud gang being smaller than a first threshold value or a sum of weights of all link edges between the node and the other nodes in the fraud gang being smaller than a second threshold value; and

removing the weak node from the fraud gang to identify a final target fraud gang.

15. The system according to claim 14, wherein the determining the weak node from the nodes included in the fraud gang comprises:

in response to that a number of link edges between the node and the other nodes in the fraud gang is less than an edge number threshold, determining that the node is the weak node meeting the weak association criterion.

16. The system according to claim 14, wherein the removing the weak node from the fraud gang includes:

in response to that an edge weight of a link edge between a node and another node in the cluster of nodes is lower than a weight threshold, determining that the

node is the weak node meeting the weak association criterion.

17. The system of claim 14, further comprising:

after the removing the node from the fraud gang and before the identifying the final target fraud gang, performing cluster discovery on the fraud gang in response to that the fraud gang meets a gang subdivision criterion.

18. The system according to claim 17, wherein the gang subdivision criterion includes:

a number of nodes included in the fraud gang is greater than a node number threshold; or

a fraud case concentration value in the fraud gang is lower than a case concentration threshold.

19. The system of claim 16, wherein the edge weight of the link edge is determined based on one or more of a number of shared media between two linked nodes that are linked by the link edge or a number of transfer transactions between the two linked nodes.