

CLAIMS

1. A network training method, wherein the method is applied to a cloud server, the cloud server comprises a first person re-identification network, the method comprises:

 sending a first network parameter corresponding to the first person re-identification network to a plurality of edge servers;

 receiving second network parameters returned by the plurality of edge servers, wherein for each edge server of the plurality of edge servers, the each edge server comprises a second person re-identification network, an identity classification network and a local image data set, the second person re-identification network and the first person re-identification network have a same network structure, the second network parameter is obtained after the each edge server trains the second person re-identification network according to the local image data set, the identity classification network and the first network parameter; and

 updating the first person re-identification network according to the second network parameters returned by the plurality of edge servers to obtain the first person re-identification network after updating.

2. The method according to claim 1, wherein updating the first person re-identification network according to the second network parameters returned by the plurality of edge servers to obtain the first person re-identification network after updating comprises:

 receiving weights corresponding to the second network parameters returned by the plurality of edge servers, wherein for the each edge server, the weight corresponding to the second network parameter is determined by the each edge server according to the second person re-identification network before training and the second person re-identification network after training;

 performing, according to the weights corresponding to the second network parameters returned by the plurality of edge servers, weighted averaging on the second network parameters returned by the plurality of edge servers to obtain the first network parameter after updating; and

 updating the first person re-identification network according to the first network parameter after updating to obtain the first person re-identification network after updating.

3. The method according to claim 1 or 2, wherein the method further comprises:

 sending a shared image data set to the plurality of edge servers;

 receiving pseudo labels returned by the plurality of edge servers, wherein for the each edge server, the pseudo label is generated by the each edge server according to the shared image data set and the second person re-identification network after training; and

 training the first person re-identification network after updating according to the shared image data set and the pseudo labels returned by the plurality of edge servers to obtain the first person re-identification network after training.

4. The method according to claim 3, wherein training the first person re-identification network after updating according to the shared image data set and the pseudo labels returned by the plurality of edge servers to obtain the first person re-identification network after training comprises:

 determining an average pseudo label according to the pseudo labels returned by the plurality of edge servers; and

 training the first person re-identification network after updating according to the

shared image data set and the average pseudo label to obtain the first person re-identification network after training.

5. A network training method, wherein the method is applied to an edge server, the edge server comprises a second person re-identification network, an identity classification network and a local image data set, the method comprises:

- receiving a first network parameter corresponding to a first person re-identification network sent by a cloud server, wherein the first person re-identification network and the second person re-identification network have a same network structure;

- training the second person re-identification network according to the local image data set, the identity classification network and the first network parameter to obtain the second person re-identification network after training, wherein the second person re-identification network corresponds to a second network parameter; and

- sending the second network parameter to the cloud server.

6. The method according to claim 5, wherein training the second person re-identification network according to the local image data set, the identity classification network and the first network parameter to obtain the second person re-identification network after training comprises:

- training the second person re-identification network and the identity classification network according to the local image data set and the first network parameter to obtain the second person re-identification network after training and the identity classification network after training.

7. The method according to claim 6, wherein the method further comprises:

- storing the identity classification network after training in the edge server.

8. The method according to claim 6 or 7, wherein the local image data set comprises image data corresponding to a plurality of identities; and dimensionality of the identity classification network is related to a quantity of the plurality of identities.

9. The method according to any one of claims 5 to 8, wherein the method further comprises:

- receiving a shared image data set sent by the cloud server;
- generating a pseudo label according to the shared image data set and the second person re-identification network after training; and
- sending the pseudo label to the cloud server.

10. The method according to any one of claims 5 to 9, wherein the method further comprises:

- determining a first eigenvector according to the second person re-identification network before training and the local image data set, and determining a second eigenvector according to the second person re-identification network after training and the local image data set;

- determining a cosine distance between the first eigenvector and the second eigenvector;
- determining a weight corresponding to the second network parameter according to the cosine distance; and

- sending the weight corresponding to the second network parameter to the cloud server.

11. The method according to any one of claims 5 to 10, wherein the edge server is an image acquisition device; and the local image data set is obtained from acquisition of the image acquisition device;

or, wherein the edge server is connected to at least one image acquisition device, the edge server and the at least one image acquisition device are located in a same geographical area; the local image data set is acquired by the edge server from the at least one image acquisition device.

12. A person re-identification method, comprising:

performing, by using a target person re-identification network, person re-identification processing on at least one frame of to-be-identified image acquired in a target geographical area to determine a person re-identification result, wherein the target person re-identification network is obtained by training with the network training method according to any one of claims 1 to 12.

13. The method according to claim 12, wherein the target person re-identification network is a first person re-identification network after updating or a first person re-identification network after training.

14. The method according to claim 12, wherein the target geographical area comprises an edge server; and in a case that the edge server comprises a second person re-identification network after training, the target person re-identification network is the second person re-identification network after training.

15. A network training apparatus, wherein the apparatus is applied to a cloud server, the cloud server comprises a first person re-identification network, the apparatus comprises:

a sending part, configured to send a first network parameter corresponding to the first person re-identification network to a plurality of edge servers;

a reception part, configured to receive second network parameters returned by the plurality of edge servers, wherein for each edge server of the plurality of edge servers, the each edge server comprises a second person re-identification network, an identity classification network and a local image data set, the second person re-identification network and the first person re-identification network have a same network structure, the second network parameter is obtained after the each edge server trains the second person re-identification network according to the local image data set, the identity classification network and the first network parameter; and

an updating part, configured to update the first person re-identification network according to the second network parameters returned by the plurality of edge servers to obtain the first person re-identification network after updating.

16. A network training apparatus, wherein the apparatus is applied to an edge server, the edge server comprises a second person re-identification network, an identity classification network and a local image data set, the apparatus comprises:

a reception part, configured to receive a first network parameter corresponding to a first person re-identification network sent by a cloud server, wherein the first person re-identification network and the second person re-identification network have a same network structure;

a network training part, configured to train the second person re-identification network according to the local image data set, the identity classification network and the first network parameter to obtain the second person re-identification network after training, wherein the second person re-identification network corresponds to a second network parameter; and

a sending part, configured to send the second network parameter to the cloud server.

17. A person re-identification apparatus, comprising:

a person re-identification part, configured to perform, by using a target person re-identification network, person re-identification processing on at least one frame of to-be-identified image acquired in a target geographical area to determine a person re-identification result, wherein the target person re-identification network is obtained by training with the network training method according to any one of claims 1 to 12.

18. An electronic device, comprising:

a processor; and

a memory, configured to store instructions executable by the processor, wherein the processor is configured to invoke the instructions stored in the memory to perform the method according to any one of claims 1 to 14.

19. A computer-readable storage medium, storing computer program instructions thereon, wherein a processor is configured to execute the computer program instructions to implement the method according to any one of claims 1 to 14.

20. A computer program, comprising computer-readable codes, wherein when the computer-readable codes are run on an electronic device, a processor in the electronic device implements the method according to any one of claims 1 to 14.