CLAIMS

1. A network connection method for a training participant of a joint training model, the training participant operating in a master-worker mode, and the method comprising:

acquiring communication state information of a worker of the training participant, the communication state information indicating a communication connection phase that the worker is in;

acquiring communication state information of a target worker as target communication state information, wherein the target worker comprises a peer node corresponding to the worker, and the peer node belongs to a different training participant of the joint training model;

resetting, in response to determining that the target communication state information does not match the communication state information of the worker, the communication connection phase that the worker is in; and

wherein the training participant and the different training participant are configured to jointly train a model using their respective training samples, wherein a plurality of server clusters connected via communication links serve as the training participant and the different training participant, wherein each of the training participant and the different training participant comprises a master and at least one worker, and wherein the communication connection phase comprises a connection establishment phase of preparing for data transmission, a communication phase of transmitting data, and a disconnection phase after data transmission.

2. The method according to claim 1, further comprising:

generating, in response to determining that the communication connection phase that the worker is in is changed, new communication state information indicating the changed communication connection phase that the worker is in.

3. The method according to claim 1, wherein the resetting, in response to determining

that the target communication state information does not match the communication state information of the worker, the communication connection phase that the worker is in comprises:

resetting the communication connection phase of the worker to be the connection establishment phase before the communication phase, in response to determining that the target communication state information indicates that the target worker is in the connection establishment phase before the communication phase and the communication state information of the worker indicates that the worker is in the communication phase.

4. A network connection apparatus for a training participant of a joint training model, the training participant operating in a master-slave mode, and the apparatus comprising:

one or more processors; and

a memory configured to store one or more programs;

wherein when the one or more programs are executed by the one or more processors, the one or more processors are caused to perform operations of:

acquiring communication state information of a worker of the training participant, the communication state information indicating a communication connection phase that the worker is in;

acquiring communication state information of a target worker as target communication state information, wherein the target worker comprises a peer node corresponding to the worker, and the peer node belongs to a different training participant of the joint training model;

resetting, in response to determining that the target communication state information does not match the communication state information of the worker, the communication connection phase that the worker is in;

wherein the training participant and the different training participant are configured to jointly train a model using their respective training samples, wherein a plurality of server clusters connected via communication links serve as the training participant and the different training participant, wherein each of the training participant and the different training

participant comprises a master and at least one worker, and wherein the communication connection phase comprises a connection establishment phase of preparing for data transmission, a communication phase of transmitting data, and a disconnection phase after data transmission.

5. The apparatus according to claim 4, wherein the one or more processors are also caused to perform operations of:

generating, in response to determining that the communication connection phase that the worker is in is changed, new communication state information indicating the changed communication connection phase that the worker is in.

6. The apparatus according to claim 4, wherein the resetting, in response to determining that the target communication state information does not match the communication state information of the worker, the communication connection phase that the worker is in comprises:

resetting the communication connection phase of the worker to the connection establishment phase before the communication phase in response to determining that the target communication state information indicates that the target worker is in the connection establishment phase before the communication phase and the communication state information of the worker indicates that the worker is in the communication phase.

7. A network connection system for a training participant of a joint training model, comprising:

a worker, configured to acquire local communication state information of the worker of the training participant, wherein the communication state information indicates a communication connection phase that the worker is in; acquire communication state information of a target worker as target communication state information, wherein the target worker comprises a peer node corresponding to the worker, and the peer node belong to a different training participant of the joint training model; terminate the process in response to

determining that the target communication state information does not match the local communication state information of the worker; and set the communication connection phase that the worker is in to a preset phase in response to reception of information instructing restart sent by a master corresponding to the worker, and update the local communication state information of the worker of the training participant;

the master, configured to send, in response to determining that there is a worker that actively terminated the process, the information instructing restart to the worker that actively terminated the process; and

wherein the training participant and the different training participant are configured to jointly train a model using their respective training samples, wherein a plurality of server clusters connected via communication links serve as the training participant and the different training participant, wherein each of the training participant and the different training participant comprises a master and at least one worker, and wherein the communication connection phase comprises a connection establishment phase of preparing for data transmission, a communication phase of transmitting data, and a disconnection phase after data transmission.

8. The system according to claim 7, further comprising:

a parameter server, configured to generate, in response to detecting an operational failure of a parameter server, failure prompt information indicating a failure of the parameter server; and

the master is further configured to

send a communication termination request to the master of another training participant of the joint training model in response to detection of presence of the failure prompt information indicating the failure of the parameter server; and

disconnect a communication connection corresponding to the communication termination request in response to reception of a confirmation information corresponding to the communication termination request.

9. The system according to claim 8, wherein the communication termination request is further used to instruct to stop the training process of the joint training model; and

the master is further configured to:

restore the training process of the joint training model from a target checkpoint in response to reception of the confirmation information corresponding to the communication termination request.

10. A server comprising:

one or more processors; and

a storage device storing one or more programs,

the one or more programs, when executed by the one or more processors, causing the one or more processors to implement the method according to any one of claims 1-3.

11. A computer-readable medium having a computer program stored thereon, wherein the program, when executed by a processor, implements the method according to any one of claims 1-3.