What is claimed is:

1. A biometric feature extraction method, applied to a node in a multi-party secure computing system, comprising:

receiving a biometric information fragment sent by a terminal device, wherein the biometric information fragment is obtained after performing fragmentation processing on obtained target biometric information by the terminal device; and

performing joint feature extraction processing on the biometric information fragment through a locally deployed first feature extraction model fragment and a second feature extraction model fragment deployed in at least one other node, to obtain a corresponding biometric feature vector shard, wherein the first feature extraction model fragment and at least one second feature extraction model fragment are obtained by performing fragmentation processing on a biometric feature extraction model;

wherein the first feature extraction model fragment includes a first convolution module, a first activation module, a first pooling module and a first fully connected module; and

performing joint feature extraction processing on the biometric information fragment through the locally deployed first feature extraction model fragment and the second feature extraction model fragment deployed in the at least one other node to obtain the corresponding biometric feature vector shard includes:

obtaining, through the first convolution module, a first convolutional feature fragment corresponding to the biometric information fragment,

combining the first activation module, the first pooling module, and a second activation module and a second pooling module in the at least one second feature extraction model fragment to perform activation processing and pooling processing on

the first convolutional feature fragment to obtain a first pooling processing result; and performing fragmentation processing on the first pooling processing result to obtain a plurality of pooled feature fragments, and

processing, through the first fully connected module, a first pooled feature fragment to obtain the biometric feature vector shard, wherein the first pooled feature fragment is determined based on undistributed pooled feature fragments among the plurality of pooled feature fragments and received pooled feature fragments distributed by other nodes.

2. The method according to claim 1, wherein:

the first feature extraction model fragment further includes a first interaction module; and

after performing fragmentation processing on the first pooling processing result to obtain the plurality of pooled feature fragments, the method further includes:

distributing, through the first interaction module, at least one pooled feature fragment among the plurality of pooled feature fragments to the at least one other node accordingly.

3. The method according to claim 1, wherein:

the first feature extraction model fragment further includes a first random mask module; and

combining the first activation module, the first pooling module, and the second activation module and the second pooling module in the at least one second feature extraction model fragment to perform activation processing and pooling processing on the first convolutional

feature fragment to obtain the first pooling processing result includes:

performing, through the first random mask model, mask recovery processing on the first convolutional feature fragment based on a second convolutional feature fragment input into at least one second activation module, to obtain a first convolutional feature recovery result,

performing, through the first activation module, activation processing on the first convolutional feature recovery result to obtain a first activation processing result, and performing fragmentation processing on the first activation processing result to obtain a plurality of activated feature fragments,

performing, through the first random mask module, mask recovery processing on a first activated feature fragment based on a second activated feature fragment input into at least one second pooling module, to obtain a first activated feature recovery result, wherein the first activated feature fragment is determined based on undistributed activated feature fragments among the plurality of activated feature fragments and activated feature fragments distributed by the other nodes, and

performing, through the first pooling module, pooling processing on the first activated feature recovery result to obtain the first pooling processing result.

4. The method according to claim 3, wherein:

the first feature extraction model fragment further includes a first interaction module; and

after performing fragmentation processing on the first activation processing result to obtain the plurality of activated feature fragments, the method further includes:

distributing, through the first interaction module, at least one activated feature

fragment, among the plurality of activated feature fragments, to the at least one other node accordingly.

5. The method according to claim 4, wherein performing, through the first random mask module, mask recovery processing on the first convolutional feature fragment based on the second convolutional feature fragment input into the at least one second pooling module, to obtain the first convolutional feature recovery result comprises:

obtaining, through the first interaction module, partial feature values in each second convolutional feature fragment; and

performing, through the first random mask module, mask recovery processing on the first convolutional feature fragment based on the obtained partial feature values to obtain the first convolutional feature recovery result, wherein the first convolutional feature recovery result is complementary to a second convolutional feature recovery result obtained by the at least one second feature extraction model fragment.

6. The method according to claim 4, wherein performing, through the first random mask module, mask recovery processing on the first activated feature fragment among the plurality of activated feature fragments based on the second activated feature fragment input into the at least one second pooling module, to obtain the first activated feature recovery result comprises:

obtaining, through the first interaction module, partial feature values in each second activated feature fragment; and

performing mask recovery processing on the first activated feature fragment based on the obtained partial feature values to obtain the first activated feature recovery result, wherein the

first activated feature recovery result is complementary to a second activated feature recovery result obtained by the at least one second feature extraction model fragment.

7. The method according to any one of claims 1 to 6, wherein:

the second feature extraction model fragment includes a second convolution module; and

obtaining, through the first convolution module, the first convolutional feature fragment corresponding to the biometric information fragment includes:

performing joint convolution processing on the biometric information fragment through a fragmented convolution kernel in the first convolution module and a fragmented convolution kernel in at least one second convolution module, to obtain the first convolutional feature fragment.

8. The method according to any one of claims 1 to 6, wherein:

the second feature extraction model fragment includes a second convolution module; and

obtaining, through the first convolution module, the first convolutional feature fragment corresponding to the biometric information fragment includes:

performing convolution processing on the biometric information fragment through a plaintext convolution kernel in the first convolution module to obtain the first convolutional feature fragment, wherein the plaintext convolution kernel in the first convolution module is the same as a plaintext convolution kernel in a second convolution module.

9. A biometric feature extraction apparatus, applied to a node in a multi-party secure

computing system, comprising:

a receiving unit, configured to receive a biometric information fragment sent by a terminal device, wherein the biometric information fragment is obtained after performing fragmentation processing on obtained target biometric information by the terminal device; and

a processing unit, configured to perform joint feature extraction processing on the biometric information fragment through a locally deployed first feature extraction model fragment and a second feature extraction model fragment deployed in at least one other node, to obtain a corresponding biometric feature vector shard, wherein the first feature extraction model fragment and at least one second feature extraction model fragment are obtained by performing fragmentation processing on a biometric feature extraction model;

wherein the first feature extraction model fragment includes a first convolution module, a first activation module, a first pooling module and a first fully connected module; and

the processing unit is configured to:

obtain, through the first convolution module, a first convolutional feature fragment corresponding to the biometric information fragment,

combine the first activation module, the first pooling module, and a second activation module and a second pooling module in the at least one second feature extraction model fragment to perform activation processing and pooling processing on the first convolutional feature fragment to obtain a first pooling processing result; and perform fragmentation processing on the first pooling processing result to obtain a plurality of pooled feature fragments, and

process, through the first fully connected module, a first pooled feature fragment to obtain the biometric feature vector shard, wherein the first pooled feature fragment is

determined based on undistributed pooled feature fragments among the plurality of pooled feature fragments and received pooled feature fragments distributed by other nodes.

10. A computer device, comprising a memory, a processor and a computer program stored in the memory and executable on the processor, wherein the processor, when executing the program, implements the steps of the method according to any one of claims 1 to 8.

11. A computer-readable storage medium, storing a computer program executable by a computer device, and when the program is run on the computer device, the computer device executes the steps of the methods according to any one of claims 1 to 8.