

CLAIMS

1. An identity authentication method, comprising:

obtaining first feature data of a first user image;

performing quantization processing on the first feature data to obtain second feature data;

and

obtaining an identity authentication result based on the second feature data,

wherein the method further comprises: before the performing quantization processing on the first feature data, performing dimensionality increasing transform processing on the first feature data by using a transform parameter to obtain transformed data, a dimension of the transformed data being greater than a dimension of the first feature data,

wherein the performing quantization processing on the first feature data to obtain second feature data comprises: performing quantization processing on the transformed data to obtain the second feature data.

~~2. The method according to claim 1, further comprising: before the performing quantization processing on the first feature data, performing dimensionality increasing transform processing on the first feature data by using a transform parameter to obtain transformed data,~~

~~wherein the performing quantization processing on the first feature data to obtain second feature data comprises: performing quantization processing on the transformed data to obtain the second feature data.~~

32. The method according to claim 21, wherein the performing dimensionality increasing transform processing on the first feature data by using a transform parameter to obtain transformed data comprises:

determining a product of the first feature data and the transform parameter as the transformed data.

43. The method according to claim ~~2~~ or 31 or 2, further comprising: before the performing dimensionality increasing transform processing on the first feature data by using a transform parameter,

initializing the transform parameter; and

performing iterative update on the initialized transform parameter based on at least one piece of sample feature data, until an iteration termination condition is met.

54. The method according to claim 43, wherein the initializing the transform parameter comprises:

initializing the transform parameter by means of a Gaussian random function.

65. The method according to claim ~~4 or 53~~ or 4, wherein the performing iterative update on the initialized transform parameter based on at least one piece of sample feature data comprises:

performing dimensionality increasing transform processing on each of the at least one piece of sample feature data based on current transform parameter to obtain at least one piece of transformed sample feature data;

performing quantization processing on each of the at least one piece of transformed sample feature data to obtain at least one piece of quantized sample feature data;

obtain a first orthogonal matrix and a second orthogonal matrix based on a first sample feature matrix and a second sample feature matrix, wherein the at least one piece of sample feature data is the first sample feature matrix, and the at least one piece of quantized sample feature data is the second sample feature matrix, and

updating a transform matrix based on the first orthogonal matrix and the second orthogonal matrix.

76. The method according to claim 65, wherein the updating a transform matrix based on the first orthogonal matrix and the second orthogonal matrix comprises:

performing intercepting operation on the first orthogonal matrix to obtain an intercepted first orthogonal matrix; and

multiplying the second orthogonal matrix and the intercepted first orthogonal matrix to obtain an updated transform matrix.

87. The method according to any one of claims ~~2 to 71~~ to 6, wherein the transform parameter comprises a transform matrix, a number of columns of the transform matrix being an integer multiple of a number of rows of the transform matrix.

~~98~~. The method according to any one of claims ~~1 to 8~~ 1 to 7, wherein the obtaining an identity authentication result based on the second feature data comprises:

obtaining the identity authentication result of the first user image based on a matching result of the second feature data and preset feature data.

~~109~~. The method according to claim ~~98~~, further comprising: before the obtaining the identity authentication result of the first user image based on a matching result of the second feature data and preset feature data,

obtaining the preset feature data from a memory, the preset feature data being a binary numerical sequence.

~~110~~. The method according to any one of claims ~~1 to 8~~ 1 to 7, wherein the obtaining an identity authentication result based on the second feature data comprises:

obtaining third feature data of a second user image; and

obtaining an identity authentication result of the second user image based on a matching result of the third feature data and the second feature data,

wherein the method further comprises:

storing the second feature data into a template database.

~~121~~. The method according to any one of claims ~~1 to 11~~ 1 to 10, wherein the obtaining first feature data of a first user image comprises:

obtaining the first user image; and

performing feature extraction on the first user image to obtain the first feature data of the first user image.

~~1312~~. An unlocking method, comprising:

obtaining a face image;

processing the face image to obtain integer face feature data; and

determining, based on the integer face feature data, whether to unlock a terminal device,

wherein the processing the face image to obtain integer face feature data comprises:

performing feature extraction on the face image to obtain floating-point face feature data;
performing dimensionality increasing transform processing on the floating-point face feature data to obtain face feature transformed data, a dimension of the face feature transformed data being greater than a dimension of the floating-point face feature data; and
performing quantization processing on the face feature transformed data to obtain the integer face feature data.

~~14. The method according to claim 13, wherein the processing the face image to obtain integer face feature data comprises:~~

~~performing feature extraction on the face image to obtain floating-point face feature data;~~
~~and~~

~~performing quantization processing on the floating-point face feature data to obtain the integer face feature data.~~

~~15~~13. The method according to claim ~~13 or 14~~12, wherein the integer face feature data comprises a binary numerical sequence.

~~16~~14. The method according to ~~any one of claims 13 to 15~~claim 12 or 13, wherein the determining, based on the integer face feature data, whether to unlock a terminal device comprises:

determining, based on whether the integer face feature data matches preset face feature data, whether to unlock the terminal device, wherein the preset face feature data is integer data.

~~17~~15. An identity authentication apparatus, comprising:

a first determination module, configured to obtain first feature data of a first user image;
a quantization module, configured to quantize the first feature data to obtain second feature data; and

an identify authentication module, configured to obtain an identity authentication result based on the second feature data.

wherein the apparatus further comprises:

a transform module, configured to perform dimensionality increasing transform processing

on the first feature data by using a transform parameter to obtain transformed data, a dimension of the transformed data being greater than a dimension of the first feature data,

wherein the quantization module is configured to quantize the transformed data to obtain the second feature data.

~~18~~16. An unlocking apparatus, comprising:

a second obtaining module, configured to obtain a face image;

a first processing module, configured to process the face image to obtain integer face feature data; and

a second release module, configured to determine, based on the integer face feature data, whether to unlock a terminal device,

wherein the first processing module is configured to: perform feature extraction on the face image to obtain floating-point face feature data,

perform dimensionality increasing transform processing on the floating-point face feature data to obtain face feature transformed data, a dimension of the face feature transformed data being greater than a dimension of the floating-point face feature data; and

quantize the face feature transformed data to obtain the integer face feature data.

~~19~~17. A computer readable storage medium with computer program instructions stored thereon, wherein when executed by a processor, the program instructions implement the operations of the identity authentication method according to any one of claims 1 to ~~11~~12, or implement the operations of the unlocking method according to any one of claims ~~12 to 14~~13 to 16.

~~20~~18. An electronic device, comprising: a first processor, a first memory, a first communication element, and a first communication bus, wherein the first processor, the first memory, and the first communication element communicate with one another by means of the first communication bus; the first memory is configured to store at least one executable instruction, and the executable instruction causes the first processor to execute the operations of the identify authentication method according to any one of claims 1 to ~~12~~11 or the ~~the~~ operations of the unlocking method according to any one of claims ~~13 to 16~~12 to 14.