CLAIMS

1. An access control method, comprising:

acquiring a scene image, and recognizing one or more face images in the scene image through parallel recognition;

determining one or more attributes of the one or more face images, each attribute comprising a registered user and an unregistered user, and each attribute corresponding to a face image;

in condition that the scene image comprises multiple face images, determining whether attributes corresponding to the multiple face images comprise the registered user;

in response to determining that the attributes corresponding to the multiple face images comprise the registered user, sending an opening instruction to an access control device, and controlling the access control device to be opened;

in response to determining that the attributes corresponding to the multiple face images comprise no registered user, determining whether an access control verification request instruction is received; and

in response to reception of the access control verification request instruction, in condition that verification for the access control verification request instruction succeeds, sending the opening instruction to the access control device, and controlling the access control device to be opened.

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

in condition that the verification for the access control verification request instruction fails, sending a doorbell trigger interface display instruction to the access control device; and/or

sending an alarm prompt,

the method further comprising:

in condition that the attributes corresponding to the multiple face images comprise the registered user and a number of the registered users is less than a number of the face images, sending an alarm prompt.

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

in condition that the scene image comprises one face image, determining whether an attribute of the face image is the registered user;

in response to determining that the attribute of the face image is the registered user, sending the opening instruction to the access control device, and controlling the access control device to be opened; in response to determining that the attribute of the face image is the unregistered user, determining whether the access control verification request instruction is received; and

in response to reception of the access control verification request instruction, in condition that the verification for the access control verification request instruction succeeds, sending the opening instruction to the access control device, and controlling the access control device to be opened.

4. The method according to claim 3, further comprising:

in condition that the verification for the access control verification request instruction fails, sending a doorbell trigger interface display instruction to the access control device; and/or

sending an alarm prompt.

5. The method according to claim 1, after recognizing the multiple face images in the scene image, the method further comprises:

recognizing body movements between visitors in the recognized multiple face images, each visitor corresponding to a respective one of the multiple face images and having corresponding body movements; and

identifying the multiple face images with a group attribute according to the body movements, the group attribute being used for describing an interpersonal relationship between the visitors to which the multiple faces belong.

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

receiving access authority modification information for a first face image, the access authority modification information comprising an access site, an access frequency, and/or an access time; and

modifying an access authority corresponding to the first face image according to the access authority modification information.

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

in the case of sending the opening instruction to the access control device, and controlling the access control device to be opened, generating a passing record corresponding to each face image, wherein the passing record comprises at least one of a passing time, an address, or the face image.

8. The method according to claim 1, wherein the parallel recognition comprises:

parallel recognition of multiple face images in terms of time, for alternatively recognizing each of the multiple face images according to a preset time slot sequence; or

parallel recognition of multiple face images in terms of steps, for alternatively recognizing each of the multiple face images according to an order of performing face feature extraction and then performing face matching.

9. An access control apparatus, comprising:

an acquiring unit, configured to acquire a scene image;

a recognizing unit, configured to recognize one or more face images in the scene image through parallel recognition;

a determining unit, configured to determine one or more attributes of the one or more face images, each attribute comprising a registered user and an unregistered user, and each attribute corresponding to a face image;

a judging unit, configured to, in condition that the scene image comprises multiple face images, determine whether the attributes corresponding to the multiple face images comprise the registered user;

a controlling unit, configured to, in response to determining that the attributes corresponding to the multiple face images comprise the registered user, send an opening instruction to an access control device, and control the access control device to be opened;

a receiving unit, configured to receive an access control verification request instruction; and

a verifying unit, configured to verify the access control verification request instruction;

wherein the judging unit is further configured to determine whether the access control verification request instruction is received; and

the controlling unit is further configured to, in response to reception of the access control verification request instruction, in a case that verification for the access control verification request instruction succeeds, send the opening instruction to the access control device, and control the access control device to be opened.

10. The access control apparatus according to claim 9, further comprising:

a sending unit, configured to, in condition that the verification for the access control verification request instruction fails, send a doorbell trigger interface display instruction to the access control device; and/or

an alarming unit, configured to send an alarm prompt,

wherein

the alarming unit is configured to, in condition that the attributes corresponding to the multiple face images comprise the registered user and a number of the registered users is less than a number of the face images, send an alarm prompt.

11. The access control apparatus according to claim 9, wherein

the judging unit is further configured to, in condition that the scene image comprises one face image, determine whether an attribute of the face image is the registered user;

the controlling unit is further configured to, in response to determining that the attribute of the face image is the registered user, send the opening instruction to the access control device, and control the access control device to be opened;

the judging unit is further configured to determine whether the access control verification request instruction is received; and

the controlling unit is further configured to, in response to reception of the access control verification request instruction, in condition that the verification for the access control verification request instruction succeeds, send the opening instruction to the access control device, and control the access control device to be opened.

12. The access control apparatus according to claim 11, further comprising:

a sending unit, configured to, in condition that the verification for the access

control verification request instruction fails, send a doorbell trigger interface display instruction to the access control device; and/or

an alarming unit, configured to send an alarm prompt.

13. The access control apparatus according to claim 9, wherein

the recognizing unit is further configured to recognize body movements between visitors in the recognized multiple face images, each visitor corresponding to a respective one of the multiple face images and having corresponding body movements; and

the method further comprises:

a grouping unit, configured to identify the multiple face images with a group attribute according to the body movements, the group attribute being used for describing an interpersonal relationship between the visitors to which the multiple faces belong.

14. The access control apparatus according to claim 9, wherein

the receiving unit, further configured to receive access authority modification information for a first face image, the access authority modification information comprising an access site, an access frequency, and/or an access time; and

the method further comprises:

a modifying unit, configured to modify an access authority corresponding to the first face image according to the access authority modification information.

15. The access control apparatus according to any one of claims 9-14, further comprising:

a recording unit, configured to, in the case of sending the opening instruction to the access control device, and controlling the access control device to be opened, generate a passing record corresponding to each face image, wherein the passing record comprises at least one of a passing time, an address, or the face image.

16. The access control apparatus according to claim 9, wherein the parallel recognition comprises:

parallel recognition of multiple face images in terms of time, for alternatively

recognizing each of the multiple face images according to a preset time slot sequence; or

parallel recognition of multiple face images in terms of steps, for alternatively recognizing each of the multiple face images according to an order of performing face feature extraction and then performing face matching.

17. An access control apparatus, comprising a processor, a communication interface, and a memory, which are connected to each other, wherein

the communication interface is configured to perform data exchange with other electronic devices;

the memory is configured to store a computer program comprising program instructions; and

the processor is configured to execute the program instructions to implement the access control method according to any one of claims 1-8.

18. An access control system, comprising an access control apparatus and an access control device, wherein

the access control apparatus is configured to control the access control device to be opened or closed, so as to restrict passing of a visitor; and

the access control apparatus is further configured to implement the access control method according to any one of claims 1-8.

19. A computer readable storage medium, having stored thereon a computer program, the computer program comprising program instructions that, when being executed by a processor, causes to processor to implement operations of the access control method according to any one of claims 1-8.

20. A computer program product, comprising a computer readable storage medium for storing a computer program, and the computer program is operable to cause a computer to implement the access control method according to any one of claims 1-8.