

CLAIMS

What is claimed is:

1. An identity verification method, comprising:
 - while a user is located in a waiting area that is adjacent to and not overlapping with a verification area, obtaining, using one or more computing devices and in real time, a video of the waiting area that does not include the verification area;
 - extracting, using the one or more computing devices, a plurality of images from the video, wherein the plurality of images comprises a first image of the user, wherein the plurality of images further comprises a first and second face image of the user, and wherein extracting the plurality of images comprises:
 - extracting a plurality of frames from the video;
 - identifying, from the plurality of frames, the first and second face image of the user;
 - determining that a size of the second face image is greater than a predetermined size and the size of the first face image is smaller than the predetermined size; and
 - in response to determining that the size of the second face image is greater than the predetermined size and the size of the first face image is smaller than the predetermined size, extracting, from the plurality of frames, the first face image of the user;
 - storing, using the one or more computing devices, the plurality of images;
 - while the user is located inside the verification area, obtaining, using the one or more computing devices, identification information from the user;
 - identifying, using the one or more computing devices and based on the identification information, a second image that is associated with the identification information; and
 - performing, using the one or more computing devices, identity verification on the user using the plurality of images, including the first image, and the second image.
2. The method according to claim 1, wherein the verification area is a predefined area where the identity verification is performed, wherein the waiting area is a predefined area.

3. The method according to claim 1, further comprising:
deleting, from the plurality of images, an image obtained at a time that is before a predetermined time period.

4. The method according to claim 1, wherein obtaining the identification information from the user comprises:

obtaining the identification information from a radio frequency identification (RFID) tag or a near field communication (NFC) chip carried by the user.

5. The method according to claim 1, wherein the performing comprises:
determining whether any image of the plurality of images matches the second image;
in response to determining that a particular image of the plurality of images matches the second image, determining that the user passed the identity verification; and
in response to determining that none of the plurality of images matches the second image, determining that the user failed the identity verification.

6. A non-transitory, computer-readable medium storing one or more instructions executable by a computer system to perform operations comprising:

while a user is located in a waiting area that is adjacent to and not overlapping with a verification area, obtaining, using one or more computing devices and in real time, a video of the waiting area that does not include the verification area;

extracting, using the one or more computing devices, a plurality of images from the video, wherein the plurality of images comprises a first image of the user, wherein the plurality of images further comprises a first and second face image of the user, and wherein extracting the plurality of images comprises:

extracting a plurality of frames from the video;

identifying, from the plurality of frames, the first and second face image of the user;

determining that a size of the second face image is greater than a predetermined size and the size of the first face image is smaller than the predetermined size; and

in response to determining that the size of the second face image is greater than the predetermined size and the size of the first face image is smaller than the predetermined

size;
extracting, from the plurality of frames, the first face image of the user;
storing, using the one or more computing devices, the plurality of images;
while the user is located inside the verification area, obtaining, using the one or more computing devices, identification information from the user;
identifying, using the one or more computing devices and based on the identification information, a second image that is associated with the identification information; and
performing, using the one or more computing devices, identity verification on the user using the plurality of images, including the first image, and the second image.

7. The non-transitory, computer-readable medium according to claim 6, wherein the verification area is a predefined area where the identity verification is performed, wherein the waiting area is a predefined area.

8. The non-transitory, computer-readable medium according to claim 6, wherein the operations further comprise:
deleting, from the plurality of images, an image obtained at a time that is before a predetermined time period.

9. The non-transitory, computer-readable medium according to claim 6, wherein obtaining the identification information from the user comprises:
obtaining the identification information from a radio frequency identification (RFID) tag or a near field communication (NFC) chip carried by the user.

10. The non-transitory, computer-readable medium according to claim 6, wherein the performing comprises:
determining whether any image of the plurality of images matches the second image;
in response to determining that a particular image of the plurality of images matches the second image, determining that the user passed the identity verification; and
in response to determining that none of the plurality of images matches the second image, determining that the user failed the identity verification.

11. A computer-implemented system, comprising:

one or more computers; and

one or more computer memory devices interoperably coupled with the one or more computers and having tangible, non-transitory, machine-readable media storing one or more instructions that, when executed by the one or more computers, perform one or more operations comprising:

while a user is located in a waiting area that is adjacent to and not overlapping with a verification area, obtaining, using one or more computing devices and in real time, a video of the waiting area that does not include the verification area;

extracting, using the one or more computing devices, a plurality of images from the video, wherein the plurality of images comprises a first image of the user, wherein the plurality of images further comprises a first and second face image of the user, and wherein extracting the plurality of images comprises:

extracting a plurality of frames from the video;

identifying, from the plurality of frames, the first and second face image of the user;

determining that a size of the second face image is greater than a predetermined size and the size of the first face image is smaller than the predetermined size; and

in response to determining that the size of the second face image is greater than the predetermined size and the size of the first face image is smaller than the predetermined size,

extracting, from the plurality of frames, the first face image of the user;

storing, using the one or more computing devices, the plurality of images;

while the user is located inside the verification area, obtaining, using the one or more computing devices, identification information from the user;

identifying, using the one or more computing devices and based on the identification information, a second image that is associated with the identification information; and

performing, using the one or more computing devices, identity verification on the user using the plurality of images, including the first image, and the second image.

12. The computer-implemented system according to claim 11, wherein the verification

area is a predefined area where the identity verification is performed, wherein the waiting area is a predefined area.

13. The computer-implemented system according to claim 11, wherein the operations further comprise:

deleting, from the plurality of images, an image obtained at a time that is before a predetermined time period.

14. The computer-implemented system according to claim 11, wherein obtaining the identification information from the user comprises:

obtaining the identification information from a radio frequency identification (RFID) tag or a near field communication (NFC) chip carried by the user.

15. The method according to claim 1, wherein the waiting area is a rectangular area, and wherein a gap exists between the waiting area and the verification area.

16. The method according to claim 15, wherein the verification area is a rectangular area, and wherein a width of the waiting area is the same as a width of the verification area.