CLAIMS

1. An image processing method, comprising:

obtaining a first image and a second image of a to-be-authenticated object, wherein the first image is captured by a first camera module, and the second image is captured by at least one second camera module;

comparing the first image with image data in a target library for identity authentication, to obtain a first authentication result; and

in response to that the first authentication result is authentication failure, performing joint authentication on the first image and the second image, and determining the identity of the to-be-authenticated object according to a second authentication result of the joint authentication.

2. The method according to claim 1, wherein the target library comprises a whitelist and blacklist library;

comparing the first image with the image data in the target library for identity authentication, to obtain the first authentication result comprises:

comparing first feature data of the first image with feature data of each image in the whitelist and blacklist library; and

in the case that feature data matching the first feature data exists in the whitelist and blacklist library, determining that the first authentication result is authentication success, and determining a to-be-authenticated object corresponding to the first image as a blacklist or whitelist object.

3. The method according to claim 1 or 2, wherein the target library comprises an annotated stranger library;

comparing the first image with the image data in the target library for identity authentication, to obtain the first authentication result comprises:

comparing first feature data of the obtained first image with feature data of an image in the annotated stranger library; and

in the case that feature data matching the first feature data exists in the annotated stranger library, determining that the first authentication result is authentication success, and determining the to-be-authenticated object corresponding to the first image as an annotated stranger.

4. The method according to claim 3, wherein the method further comprises: in the case that the feature data matching the first feature data exists in the annotated stranger library,

collecting statistics about a number of times that the to-be-authenticated object corresponding to the first image is annotated as a stranger.

5. The method according to any one of claims 1 to 4, further comprising:

in the case that the first authentication result is authentication success, adding the first image and associated information of the first image to a matching record corresponding to the matched feature data, wherein the associated information of the first image comprises at least one of: information of time when the first camera module captures the first image, identification information of the first camera module, or position information of the first camera module.

6. The method according to any one of claims 1 to 5, wherein the method further comprises: before performing joint authentication on the first image and the second image,

performing deduplication processing on the first image and/or the second image of which authentication fails within a first time range, to obtain a first image and/or a second image that satisfies a first preset condition for each to-be-authenticated object within the first time range.

7. The method according to any one of claims 1 to 6, wherein in response to that the first authentication result is authentication failure, performing joint authentication on the first image and the second image, and determining the identity of the to-be-authenticated object according to the second authentication result of the joint authentication comprises:

performing clustering processing on a first image whose first authentication result is authentication failure and a second image whose first authentication result is authentication failure within a second time range, to obtain an image set for each to-be-authenticated object;

determining similarities between each of a plurality of images in the image set

and other images in the image set;

determining whether the image set satisfies a second preset condition based on a similarity corresponding to each image in the image set; and

in the case that the image set satisfies the second preset condition, determining that the to-be-authenticated object corresponding to the image set is a stranger.

8. The method according to claim 7, wherein determining the similarities between each of the plurality of images in the image set and other images in the image set comprises:

obtaining a sum value of dot products of feature data of each of the plurality of images in each image set and feature data of all images; and

determining the similarities between each of the plurality of images and remaining images except the image based on the sum value and a number of feature data in the image set.

9. The method according to claim 7 or 8, wherein performing clustering processing on the first image whose first authentication result is authentication failure and the second image whose first authentication result is authentication failure within the second time range, to obtain the image set for each to-be-authenticated object comprises:

obtaining first feature data and second feature data respectively corresponding to the first image and the second image of which authentication fails within the second time range;

comparing the first feature data and the second feature data for matching to determine whether each piece of first feature data and each piece of second feature data correspond to a same to-be-authenticated object; and

performing clustering on the first feature data and the second feature data of the same to-be-authenticated object to form an image set of the same to-be-authenticated object.

10. The method according to any one of claims 7 to 9, wherein determining whether the image set satisfies the second preset condition based on the similarity corresponding to each image in the image set comprises at least one of the following manners:

a maximum similarity among the similarities corresponding to the plurality of images in the image set is greater than a first similarity threshold;

an amount of feature data with a similarity among the similarities corresponding to the plurality of images in the image set greater than a second similarity threshold exceeds a preset ratio; or

a minimum similarity among the similarities corresponding to the plurality of images in the image set is greater than a third similarity threshold.

11. The method according to any one of claims 7 to 10, wherein in response to that the first authentication result is authentication failure, performing joint authentication on the first image and the second image, and determining the identity of the to-be-authenticated object according to the second authentication result of the joint authentication further comprises:

in the case that the similarities between the plurality of images in the image set does not satisfy a preset condition, deleting all images corresponding to the image set.

12. The method according to any one of claims 7 to 11, wherein in the case that the image set satisfies the second preset condition, determining that the to-be-authenticated object corresponding to the image set is the stranger comprises:

in the case that the images corresponding to the feature data in the feature data set are images captured by different camera modules in different time ranges, determining the to-be-authenticated object corresponding to the feature data set to be the stranger.

13. The method according to any one of claims 1 to 12, wherein obtaining the first image and the second image of the to-be-authenticated object comprises:

respectively obtaining a first video captured by the first camera module and a second video captured by at least one second camera module, and preprocessing the first video to obtain a plurality of third images and preprocessing the second video to obtain a plurality of fourth images, or receiving the plurality of third images and the plurality of fourth images; and

determining an image of the plurality of third images that satisfies quality requirements as the first image, and determining an image of the plurality of fourth images that satisfies the quality requirements as the second image.

14. The method according to claim 13, wherein the method further comprises: after obtaining the first image and the second image of the to-be-authenticated object, and before obtaining first feature data of the first image, and comparing the first feature data with feature data in the target library for identity authentication, to obtain the first authentication result,

detecting whether the first image and/or the second image comprises a predetermined feature; and

in response to that the first image and/or the second image comprises the predetermined feature, annotating the first image and/or the second image comprising the predetermined feature, wherein the predetermined feature comprises at least one of a mask, a hat, or sunglasses.

15. The method according to any one of claims 1 to 14, further comprising:

outputting and prompting the first authentication result or the second authentication result.

16. The method according to claim 15, wherein outputting and prompting the first authentication result or the second authentication result comprises:

in response to that the first authentication result is authentication success, outputting the identity of the to-be-authenticated object and associated information of the to-be-authenticated object in a preset manner, and in response to determining that the to-be-authenticated object is the annotated stranger, outputting the number of times that the to-be-authenticated object is annotated as the stranger; or

outputting the second authentication result.

17. The method according to any one of claims 1 to 16, further comprising:

in response to the second authentication result indicating that the to-be-authenticated object is the stranger, storing the first image, the second image, and the associated information that correspond to the to-be-authenticated object in the target library; and

displaying an authentication result that the to-be-authenticated object is determined as the stranger, statistical information, and prompt information through a user interaction interface.

18. An image processing apparatus, comprising:

an obtaining module, configured to obtain a first image and a second image of a to-be-authenticated object, wherein the first image is captured by a first camera module, and the second image is captured by at least one second camera module;

a first authentication module, configured to compare the first image with image data in a target library for identity authentication, to obtain a first authentication result; and

a second authentication module, configured to perform, in response to that the first authentication result is authentication failure, joint authentication on the first image and the second image, and determine the identity of the to-be-authenticated object according to a second authentication result of the joint authentication.

19. An electronic device, comprising:

a processor; and

a memory configured to store processor-executable instructions;

wherein the processor is configured to execute the method according to any one of claims 1 to 17.

20. A computer-readable storage medium, having computer program instructions stored thereon, wherein the computer program instructions, when being executed by a processor, enable the processor to implement the method according to any one of claims 1 to 17.