CLAIMS

1. An object recognition method, comprising:

acquiring at least two consecutive frames of first images each comprising an image of at least one target object;

determining a mapping relationship between each of the first images and a preset standard image associated with the target object, wherein the preset standard image is a standard image set in advance, and there is no occlusion of an object placement region of the target object in the preset standard image;

performing object recognition on the target object in each of the first images based on the mapping relationship to obtain a recognition result of the target object in each of the first images; and

determining a target recognition result of the target object based on the recognition results of the target objects in the at least two consecutive frames of first images,

wherein determining mapping relationship between each of the first images and the preset standard image associated with the target object comprises:

determining first pixel coordinates of a preset reference point in the preset standard image;

determining second pixel coordinates of an image reference point, associated with the preset reference point, in each of the first images;

determining a transformation matrix between the first pixel coordinates and the second pixel coordinates; and

determining the mapping relationship based on the transformation matrix.

2. The method of claim 1, wherein acquiring the at least two consecutive frames of first images each comprising the image of the at least one target object comprises:

acquiring an image acquisition apparatus having a preset inclination angle with ~~an~~ the object placement region where the target object is placed;

acquiring images of the target object by using the image acquisition apparatus to obtain the at least two consecutive frames of first images.

~~3. The method of claim 2, further comprising: before determining the mapping relationship between each of the first images and the preset standard image associated with the target object,~~

~~determining a first acquisition angle of each of the first images;~~

~~acquiring an image of the target object placed in the object placement region with a second acquisition angle to obtain the preset standard image, wherein a difference between the second acquisition angle and the first acquisition angle is less than a preset angle threshold.~~

~~4. The method of any one of claims 1 to 3, wherein determining mapping relationship between each of the first images and the preset standard image associated with the target object comprises:~~

~~determining first pixel coordinates of a preset reference point in the preset standard image;~~

~~determining second pixel coordinates of an image reference point, associated with the preset reference point, in each of the first images;~~

~~determining a transformation matrix between the first pixel coordinates and the second~~

~~pixel coordinates; and~~

~~determining the mapping relationship based on the transformation matrix.~~

~~5.~~3. The method of ~~any one of claims 2 to 4~~claim 1 or 2, wherein performing object recognition on the target object in each of the first images based on the mapping relationship to obtain the recognition result of the target object in each of the first images comprises:

determining a to-be-recognized region matching the object placement region in each of the first images based on the mapping relationship; and

performing object recognition on the target object in the to-be-recognized region in each of the first images to obtain the recognition result of the target object in each of the first images.

~~6.~~4. The method of claim ~~5~~3, wherein determining the to-be-recognized region matching the object placement region in each of the first images based on the mapping relationship comprises:

determining, in the preset standard image, an image reference region that matches the object placement region and is represented in a manner of vertices; and

projecting the image reference region into each of the first images based on the mapping relationship to obtain the to-be-recognized region in each of the first images.

~~7.~~5. The method of claim ~~5 or 6~~3 or 4, wherein performing object recognition on the target object in the to-be-recognized region in each of the first images to obtain the recognition result of the target object in each of the first images comprises:

performing object recognition on the target object in the to-be-recognized region in each of the first images to obtain recognition information of the target object in each of the first

images;

classifying the target object in each of the first images based on the recognition information of the target object, and determining a number corresponding to each recognition information of the target object in each of the first images; and

determining, as the recognition result of the target object in each of the first images, the recognition information of the target object in each of the first images and the number corresponding to each recognition information.

~~8.~~6. The method of claim ~~7~~5, wherein the recognition information of the target object comprises at least one of:

a category of the target object, a value of the target object, a material of the target object, or a size of the target object.

~~9.~~7. The method of any one of claims 1 to ~~8~~6, wherein determining the target recognition result of the target object based on the recognition results of the target objects in the at least two consecutive frames of first images comprises:

classifying the recognition results of the target objects in the at least two consecutive frames of first images to obtain a classification result indicating classes of the recognition results; and

determining the target recognition result of the target object based on the classification result and a preset value, wherein a preset ratio between the preset value and a number of the at least two consecutive frames of first images is less than 1, and the preset value is a positive integer.

~~10.~~8. The method of claim ~~9~~7, wherein determining the target recognition result of the target object based on the classification result and the preset value comprises:

determining a number corresponding to each of the classes based on the classification result; and

in a case where the numbers corresponding to the classes comprise a number greater than the preset value, determining, a recognition result of a class corresponding to a first number greater than the preset value, as the target recognition result of the target object.

~~11.~~9. The method of claim ~~10~~8, further comprising:

in a case where the numbers corresponding to the classes do not comprise a number greater than the preset value, selecting a second number having a largest value from the numbers; and

determining, a recognition result of a class corresponding to the second number, as the target recognition result of the target object, and issuing alarm information.

~~12.~~10. An object recognition apparatus, comprising:

an acquisition module, configured to acquire at least two consecutive frames of first images each comprising an image of at least one target object;

a first determination module, configured to determine a mapping relationship between each of the first images and a preset standard image associated with the target object, wherein the preset standard image is a standard image set in advance, and there is no occlusion of an object placement region of the target object in the preset standard image;

a recognition module, configured to perform object recognition on the target object in each of the first images based on the mapping relationship to obtain a recognition result of the target object in each of the first image; and

a second determination module, configured to determine a target recognition result of the target object based on the recognition results of the target objects in the at least two consecutive frames of first images.

wherein the first determination module is further configured to determine first pixel coordinates of a preset reference point in the preset standard image; determine second pixel coordinates of an image reference point, associated with the preset reference point, in each of the first images; determine a transformation matrix between the first pixel coordinates and the second pixel coordinates; and determine the mapping relationship based on the transformation matrix.

~~13.~~11. A computer device, comprising a memory storing computer executable instructions thereon and a processor, wherein the object recognition method of any one of claims 1 to ~~11~~ 9 can be implemented when the processor runs the computer executable instructions on the memory.

~~14.~~12. A computer storage medium having stored thereon computer executable instructions, wherein the object recognition method of any one of claims 1 to ~~11~~ 9 can be implemented after the computer executable instructions are executed.