**CLAIMS**

1. An image processing method, comprising:

obtaining a key frame image that comprises a target object, and obtaining a to-be-processed frame image that comprises the target object;

extracting one or more feature points in the key frame image and one or more feature points in the to-be-processed frame image, respectively;

determining a matching relationship between each feature point in the key frame image and each feature point in the to-be-processed frame image;

determining a transformation relationship based on the feature point in the key frame image and a feature point in the to-be-processed frame image that matches the feature point in the key frame image; and

processing the to-be-processed frame image based on the transformation relationship to obtain a target frame image,

wherein the extracting a feature point in the key frame image and a feature point in the to-be-processed frame image respectively comprises:

determining multiple second pixel points in a preset area range of a first pixel point in the key frame image or in the to-be-processed frame image;

determining whether gray-scale values of the multiple second pixel points are different from a gray-scale value of the first pixel point; and

if the gray-scale values of the multiple second pixel points are different from the gray-scale value of the first pixel point, determining that the first pixel point is a feature point in the key frame image or in the to-be-processed frame image.

2. The method according to claim 1, wherein the determining a matching relationship between each feature point in the key frame image and each feature point in the to-be-processed frame image comprises:

obtaining a first group of pixel point pairs associated with a first feature point in the key frame image, and obtaining a second group of pixel point pairs associated with a second feature point in the to-be-processed frame image, wherein the first feature point is one feature point in the key frame image, the second feature point is one feature point in the to-be-processed frame

image, a relative position relationship between a first pixel point pair in the first group of pixel point pairs and the first feature point is consistent with a relative position relationship between a second pixel point pair in the second group of pixel point pairs and the second feature point, the first group of pixel point pairs comprises at least one group of first pixel point pairs, and the second group of pixel point pairs comprises at least one group of second pixel point pairs;

comparing pixel values of two pixel points comprised in the first pixel point pair to obtain a first comparison result, and comparing pixel values of two pixel points comprised in the second pixel point pair to obtain a second comparison result;

determining a similarity between the first group of pixel point pairs and the second group

of pixel point pairs based on at least one first comparison result corresponding to the at least one group of first pixel point pairs and at least one second comparison result corresponding to the at least one group of second pixel point pairs; and

if the similarity reaches a first preset threshold, determining that the first feature point matches the second feature point.

3. The method according to claim 2, the determining a similarity between the first group of pixel point pairs and the second group of pixel point pairs based on at least one first comparison result corresponding to the at least one group of first pixel point pairs and at least one second comparison result corresponding to the at least one group of second pixel point pairs comprises:

generating a first character string based on the at least one first comparison result;

generating a second character string based on the at least one second comparison result; and

determining a first Hamming distance based on the first character string and the second character string, and determining the similarity between the first group of pixel point pairs and the second group of pixel point pairs based on the first Hamming distance.

4. The method according to any one of claims 1 to 3, wherein the determining a transformation relationship based on the feature point in the key frame image and a feature point in the to-be-processed frame image that matches the feature point in the key frame image comprises:

filtrating a set of feature point pairs to obtain a set of target feature point pairs, wherein each feature point pair is composed of one feature point in the key frame image and one feature point in the to-be-processed frame image that matches the feature point in the key frame image, and the set of feature point pairs comprise multiple groups of feature point pairs; and

determining the transformation relationship based on a target feature point pair in the set of target feature point pairs.

5. The method according to claim 4, wherein the filtrating a set of feature point pairs to obtain a set of target feature point pairs comprises:

obtaining a similarity between a feature point in the key frame image and a feature point in the to-be-processed frame image that are comprised in each feature point pair in the set of

feature point pairs;

determining a maximum value of similarities corresponding to all feature point pairs in the set of feature point pairs, and determining a first threshold based on the maximum value; and

removing one or more feature point pairs corresponding to similarities less than the first threshold from the set of feature point pairs, to obtain the set of target feature point pairs.

6. The method according to claim 4, wherein the determining the transformation relationship based on a target feature point pair in the set of target feature point pairs comprises:

determining a transformation matrix based on coordinates of a feature point in the key frame image and coordinates of a feature point in the to-be-processed frame image, which feature points are comprised in the target feature point pair in the set of target feature point pairs.

7. The method according to claim 6, wherein the processing the to-be-processed frame image based on the transformation relationship to obtain a target frame image comprises:

transforming, based on the transformation matrix, a target area in the to-be-processed frame image that comprises the target object, to obtain the target frame image.

8. The method according to any one of claims 1 to 7, wherein after the obtaining the target frame image, the method further comprises:

extracting a feature point in the target frame image;

determining a first loss value based on the feature point in the key frame image and the feature point in the target frame image, wherein the feature point in the key frame image for determining the first loss value is different from the feature point in the key frame image for determining the transformation relationship; and

if the first loss value does not exceed a second threshold, retaining the obtained target frame image;

if the first loss value exceeds the second threshold, deleting the obtained target frame image.

9. An image processing apparatus, comprising an image obtaining unit, a feature extracting unit, a matching unit, and a transforming unit, wherein:

the image obtaining unit is configured to: obtain a key frame image that comprises a target object, and obtain a to-be-processed frame image that comprises the target object;

the feature extracting unit is configured to extract one or more feature points in the key frame image and one or more feature points in the to-be-processed frame image, respectively;

the matching unit is configured to determine a matching relationship between each feature point in the key frame image and each feature point in the to-be-processed frame image; and

the transforming unit is configured to: determine a transformation relationship based on the feature point in the key frame image and a feature point in the to-be-processed frame image that matches the feature point in the key frame image, and process the to-be-processed frame image based on the transformation relationship to obtain a target frame image,

wherein the feature extracting unit is configured to:

determine multiple second pixel points in a preset area range of a first pixel point in the key frame image or in the to-be-processed frame image;

determine whether gray-scale values of the multiple second pixel points are different from a gray-scale value of the first pixel point; and

if the gray-scale values of the multiple second pixel points are different from the gray-scale value of the first pixel point, determine that the first pixel point is a feature point in the key frame image or in the to-be-processed frame image.

10. The apparatus according to claim 9, wherein the matching unit is configured to:

obtain a first group of pixel point pairs associated with a first feature point in the key frame image, and obtain a second group of pixel point pairs associated with a second feature point in the to-be-processed frame image, wherein the first feature point is one feature point in the key frame image, the second feature point is one feature point in the to-be-processed frame image, a relative position relationship between a first pixel point pair in the first group of pixel point pairs and the first feature point is consistent with a relative position relationship between a second pixel point pair in the second group of pixel point pairs and the second feature point, the first group of pixel point pairs comprises at least one group of first pixel point pairs, and the

second group of pixel point pairs comprises at least one group of second pixel point pairs;

compare pixel values of two pixel points comprised in the first pixel point pair to obtain a first comparison result, and compare pixel values of two pixel points comprised in the second pixel point pair to obtain a second comparison result;

determine a similarity between the first group of pixel point pairs and the second group of pixel point pairs based on at least one first comparison result corresponding to the at least one group of first pixel point pairs and at least one second comparison result corresponding to the at least one group of second pixel point pairs; and

if the similarity reaches a first preset threshold, determine that the first feature point matches the second feature point.

11. The apparatus according to claim 10, wherein the matching unit configured to determine the similarity between the first group of pixel point pairs and the second group of pixel point pairs based on the at least one first comparison result corresponding to the at least one group of first pixel point pairs and the at least one second comparison result corresponding to the at least one group of second pixel point pairs, is configured to:

generate a first character string based on the at least one first comparison result;

generate a second character string based on the at least one second comparison result; and

determine a first Hamming distance based on the first character string and the second character string, and determine the similarity between the first group of pixel point pairs and the second group of pixel point pairs based on the first Hamming distance.

12. The apparatus according to any one of claims 9 to 11, further comprising a filtrating unit, configured to filtrate a set of feature point pairs to obtain a set of target feature point pairs, wherein each feature point pair is composed of one feature point in the key frame image and one feature point in the to-be-processed frame image that matches the feature point in the key frame image, and the set of feature point pairs comprise multiple groups of feature point pairs; and

the transforming unit configured to determine the transformation relationship based on the feature point in the key frame image and a feature point in the to-be-processed frame image that matches the feature point in the key frame image, is configured to:

determine the transformation relationship based on a target feature point pair in the set of

target feature point pairs.

13. The apparatus according to claim 12, wherein the filtrating unit is configured to:

obtain a similarity between a feature point in the key frame image and a feature point in the to-be-processed frame image that are comprised in each feature point pair in the set of feature point pairs;

determine a maximum value of similarities corresponding to all feature point pairs in the set of feature point pairs, and determine a first threshold based on the maximum value; and

remove one or more feature point pairs corresponding to similarities less than the first threshold from the set of feature point pairs, to obtain the set of target feature point pairs.

14. The apparatus according to claim 12, wherein the transforming unit configured to determine the transformation relationship based on the target feature point pair in the set of target feature point pairs, is configured to:

determine a transformation matrix based on coordinates of a feature point in the key frame image and coordinates of a feature point in the to-be-processed frame image, which feature points are comprised in the target feature point pair in the set of target feature point pairs.

15. The apparatus according to claim 14, wherein the transforming unit configured to process the to-be-processed frame image based on the transformation relationship to obtain the target frame image, is configured to:

transform, based on the transformation matrix, a target area in the to-be-processed frame image that comprises the target object, to obtain the target frame image.

16. The apparatus according to any one of claims 9 to 15, further comprising a determining unit and a processing unit, wherein

the feature extracting unit is further configured to extract a feature point in the target frame image;

the determining unit is configured to determine a first loss value based on the feature point in the key frame image and the feature point in the target frame image, wherein the feature point in the key frame image for determining the first loss value is different from the feature

point in the key frame image for determining the transformation relationship; and

the processing unit is configured to: if the first loss value does not exceed a second threshold, retain the obtained target frame image;

if the first loss value exceeds the second threshold, delete the obtained target frame image.

17. A computer-readable storage medium having a computer program stored thereon, wherein when the computer program is executed by a processor, steps of the method according to any one of claims 1 to 8 are implemented.

18. An electronic device, comprising a memory, a processor, and a computer program that is stored in the memory and may run on the processor, wherein steps of the method according to any one of claims 1 to 8 are implemented when the program is executed by the processor.