CLAIMS

1. An image processing method, comprising:

determining a guidance group set for a target object in a to-be-processed image, the guidance group comprising at least one guidance point, the guidance point being configured to indicate a position of a sampling pixel and a magnitude and direction of a motion velocity of the sampling pixel, and the sampling pixel being a pixel of the target object in the to-be-processed image; and

performing, according to the guidance point in the guidance group and the to-be-processed image, optical flow prediction to obtain a motion of the target object in the to-be-processed image.

2. The method of claim 1, wherein performing, according to the guidance point in the guidance group and the to-be-processed image, optical flow prediction to obtain the motion of the target object in the to-be-processed image comprises:

performing, according to the magnitude and direction of the motion velocity of the sampling pixel indicated by the guidance point in the guidance group, the position of the sampling pixel indicated by the guidance point in the guidance group and the to-be-processed image, optical flow prediction to obtain the motion of the target object in the to-be-processed image.

3. The method of claim 1 or 2, wherein performing, according to the guidance point in the guidance group and the to-be-processed image, optical flow prediction to obtain the motion of the target object in the to-be-processed image comprises:

generating, according to the magnitude and direction of the motion velocity of the sampling pixel indicated by the guidance point in the guidance group, a sparse motion

corresponding to the target object in the to-be-processed image, the sparse motion being configured to indicate a magnitude and direction of a motion velocity of each sampling pixel of the target object;

generating, according to the position of the sampling pixel indicated by the guidance point in the guidance group, a binary mask corresponding to the target object in the to-be-processed image, the binary mask being configured to indicate a position of each sampling pixel of the target object; and

performing, according to the sparse motion, the binary mask and the to-be-processed image, optical flow prediction to obtain the motion of the target object in the to-be-processed image.

4. The method of any one of claims 1-3, wherein performing, according to the guidance point in the guidance group and the to-be-processed image, optical flow prediction to obtain the motion of the target object in the to-be-processed image comprises:

performing optical flow prediction by inputting the guidance point in the guidance group and the to-be-processed image to a first neural network, to obtain the motion of the target object in the to-be-processed image.

5. The method of claim 3, wherein performing, according to the sparse motion, the binary mask and the to-be-processed image, optical flow prediction to obtain the motion of the target object in the to-be-processed image comprises:

performing feature extraction on the sparse motion corresponding to the target object in the to-be-processed image and the binary mask corresponding to the target object in the to-be-processed image to obtain a first feature;

performing feature extraction on the to-be-processed image to obtain a second feature;

performing connection processing on the first feature and the second feature to obtain

a third feature; and

performing optical flow prediction on the third feature to obtain the motion of the target object in the to-be-processed image.

6. The method of claim 5, wherein performing optical flow prediction on the third feature to obtain the motion of the target object in the to-be-processed image comprises:

performing full-extent propagation processing by inputting the third feature to at least two propagation networks respectively, to obtain a propagation result corresponding to each propagation network; and

performing fusion by inputting the propagation result corresponding to each propagation network to a fusion network, to obtain the motion of the target object in the to-be-processed image.

7. The method of any one of claims 1-6, wherein determining the guidance group set for the target object in the to-be-processed image comprises:

determining multiple guidance groups set for the target object in the to-be-processed image, the multiple guidance groups comprising at least one different guidance point.

8. The method of claim 7, wherein performing, according to the guidance point in the guidance group and the to-be-processed image, optical flow prediction to obtain the motion of the target object in the to-be-processed image comprises:

performing, according to a guidance point in each guidance group and the to-be-processed image, optical flow prediction to obtain a motion, corresponding to a guidance of guidance group, of the target object in the to-be-processed image.

9. The method of claim 8, further comprising:

mapping the to-be-processed image according to the motion, corresponding to the guidance of each guidance group, of the target object to obtain a new image corresponding to each guidance group; and

generating a video according to the to-be-processed image and the new image corresponding to each guidance group.

10. The method of any one of claims 1-6, wherein determining the guidance group set for the target object in the to-be-processed image comprises:

determining at least one first guidance point set for a first target object in the to-be-processed image; and

generating multiple guidance groups according to the at least one first guidance point, directions of first guidance points in a same guidance group being the same and directions of first guidance points in different guidance groups being different.

11. The method of claim 10, wherein performing, according to the guidance point in the guidance group and the to-be-processed image, optical flow prediction to obtain the motion of the target object in the to-be-processed image comprises:

performing, according to the first guidance point in each guidance groups and the to-be-processed image, optical flow prediction to obtain a motion, corresponding to a guidance of each guidance group, of the first target object in the to-be-processed image.

12. The method of claim 11, further comprising:

fusing the motion, corresponding to the guidance of each guidance group, of the first target object in the to-be-processed image to obtain a mask corresponding to the first target

object in the to-be-processed image.

13. The method of claim 11 or 12, further comprising:

determining at least one second guidance point set in the to-be-processed image, a motion velocity of the second guidance point being 0, wherein

performing, according to the first guidance point in each guidance group and the to-be-processed image, optical flow prediction to obtain the motion, corresponding to the guidance of each guidance group, of the first target object in the to-be-processed image comprises:

performing, according to the first guidance point in each guidance group, the second guidance point and the to-be-processed image, optical flow prediction to obtain the motion, corresponding to the guidance of each guidance group, of the first target object in the to-be-processed image.

14. A network training method, comprising:

acquiring a first sample group, the first sample group comprising a to-be-processed image sample and a first motion corresponding to a target object in the to-be-processed image sample;

performing sampling processing on the first motion to obtain a sparse motion corresponding to the target object in the to-be-processed image sample and a binary mask corresponding to the target object in the to-be-processed image sample;

performing optical flow prediction by inputting the sparse motion corresponding to the target object in the to-be-processed image sample, the binary mask corresponding to the target object in the to-be-processed image sample and the to-be-processed image sample to a first neural network, to obtain a second motion corresponding to the target object in the to-be-processed image sample;

determining a motion loss of the first neural network according to the first motion and the second motion; and

regulating a parameter of the first neural network according to the motion loss.

15. The method of claim 14, wherein the first neural network is a conditioned motion propagation network; and/or

wherein performing sampling processing on the first motion to obtain the sparse motion corresponding to the target object in the to-be-processed image sample and the binary mask corresponding to the target object in the to-be-processed image sample comprises:

performing edge extraction processing on the first motion to obtain an edge graph corresponding to the first motion;

determining at least one key point in the edge graph;

obtaining the binary mask corresponding to the target object in the to-be-processed image sample according to one or more positions of the at least one key point; and

obtaining the sparse motion corresponding to the target object in the to-be-processed image sample according to a motion corresponding to the at least one key point.

16. An image processing device, comprising:

a first determination module, configured to determine a guidance group set for a target object in an to-be-processed image, the guidance group comprising at least one guidance point, the guidance point being configured to indicate a position of a sampling pixel and a magnitude and direction of a motion velocity of the sampling pixel and the sampling pixel being a pixel of the target object in the to-be-processed image; and

a prediction module, configured to perform, according to the guidance point in the guidance group and the to-be-processed image, optical flow prediction to obtain a motion of

the target object in the to-be-processed image.

17. A network training device, comprising:

an acquisition module, configured to acquire a first sample group, the first sample group comprising a to-be-processed image sample and a first motion corresponding to a target object in the to-be-processed image sample;

a processing module, configured to perform sampling processing on the first motion to obtain a sparse motion corresponding to the target object in the to-be-processed image sample and a binary mask corresponding to the target object in the to-be-processed image sample;

a prediction module, configured to perform optical flow prediction by inputting the sparse motion corresponding to the target object in the to-be-processed image sample, the binary mask corresponding to the target object in the to-be-processed image sample and the to-be-processed image sample to a first neural network, to obtain a second motion corresponding to the target object in the to-be-processed image sample;

a determination module, configured to determine a motion loss of the first neural network according to the first motion and the second motion; and

a regulation module, configured to regulate a parameter of the first neural network according to the motion loss.

18. An electronic device, comprising:

a processor; and

a memory, configured to store instructions executable for the processor,

wherein the processor is configured to execute the method of any one of claims 1-15.

19. A computer-readable storage medium, in which computer program instructions are stored, the computer program instructions being executed by a processor to implement the method of any one of claims 1-15.

20. A computer program, comprising computer-readable codes, the computer-readable codes running in an electronic device to enable a processor in the electronic device to execute the method of any one of claims 1-15.