

## CLAIMS

1. A video image processing method, comprising:

acquiring multiple frames of continuous video images, the multiple frames of continuous video images comprising an Nth frame of image, an (N-1)th frame of image and an (N-1)th frame of deblurred image and N being a positive integer;

obtaining deblurring convolution kernels for the Nth frame of image based on the Nth frame of image, the (N-1)th frame of image and the (N-1)th frame of deblurred image; and

performing deblurring processing on the Nth frame of image through the deblurring convolution kernels to obtain an Nth frame of deblurred image.

2. The method of claim 1, wherein obtaining the deblurring convolution kernels for the Nth frame of image based on the Nth frame of image, the (N-1)th frame of image and the (N-1)th frame of deblurred image comprises:

performing convolution processing on pixels of an image to be processed to obtain the deblurring convolution kernels, the image to be processed being obtained by concatenating the Nth frame of image, the (N-1)th frame of image and the (N-1)th frame of deblurred image in a channel dimension.

3. The method of claim 2, wherein performing convolution processing on the pixels of the image to be processed to obtain the deblurring convolution kernels comprises:

performing convolution processing on the image to be processed to extract motion information of pixels of the (N-1)th frame of image relative to pixels of the Nth frame of image to obtain alignment convolution kernels, the motion information comprising a velocity and a direction; and

performing encoding processing on the alignment convolution kernels to obtain the

deblurring convolution kernels.

4. The method of claim 2 or 3, wherein performing deblurring processing on the Nth frame of image through the deblurring convolution kernels to obtain the Nth frame of deblurred image comprises:

performing convolution processing on pixels of a feature image of the Nth frame of image through the deblurring convolution kernels to obtain a first feature image; and

performing decoding processing on the first feature image to obtain the Nth frame of deblurred image.

5. The method of claim 4, wherein performing convolution processing on the pixels of the feature image of the Nth frame of image through the deblurring convolution kernels to obtain the first feature image comprises:

reshaping the deblurring convolution kernels to make numbers of channels of the deblurring convolution kernels the same as a number of channels of the feature image of the Nth frame of image; and

performing convolution processing on the pixels of the feature image of the Nth frame of image through the reshaped deblurring convolution kernels to obtain the first feature image.

6. The method of claim 3, after performing convolution processing on the image to be processed to extract the motion information of the pixels of the (N-1)th frame of image relative to the pixels of the Nth frame of image to obtain the alignment convolution kernels, further comprising:

performing convolution processing on pixels of a feature image of the (N-1)th frame of deblurred image through the alignment convolution kernels to obtain a second feature image.

7. The method of claim 6, wherein performing convolution processing on the pixels of the feature image of the (N-1)th frame of deblurred image through the alignment convolution kernels to obtain the second feature image comprises:

reshaping the alignment convolution kernels to make numbers of channels of the alignment convolution kernels the same as a number of channels of the feature image of the (N-1)th frame of image; and

performing convolution processing on the pixels of the feature image of the (N-1)th frame of deblurred image through the reshaped alignment convolution kernels to obtain the second feature image.

8. The method of claim 7, wherein performing decoding processing on the first feature image to obtain the Nth frame of deblurred image comprises:

performing concatenation processing on the first feature image and the second feature image to obtain a third feature image; and

performing decoding processing on the third feature image to obtain the Nth frame of deblurred image.

9. The method of claim 3, wherein performing convolution processing on the image to be processed to extract the motion information of the pixels of the (N-1)th frame of image relative to the pixels of the Nth frame of image to obtain the alignment convolution kernels comprises:

performing concatenation processing on the Nth frame of image, the (N-1)th frame of image and the (N-1)th frame of deblurred image in the channel dimension to obtain the image to be processed;

performing encoding processing on the image to be processed to obtain a fourth feature image;

performing convolution processing on the fourth feature image to obtain a fifth feature image; and

regulating a number of channels of the fifth feature image to a first preset value by convolution processing to obtain the alignment convolution kernels.

10. The method of claim 9, wherein performing encoding processing on the alignment convolution kernels to obtain the deblurring convolution kernels comprises:

regulating the numbers of channels of the alignment convolution kernels to a second preset value by convolution processing to obtain a sixth feature image;

performing concatenation processing on the fourth feature image and the sixth feature image to obtain a seventh feature image; and

performing convolution processing on the seventh feature image to extract deblurring information of pixels of the (N-1)th frame of deblurred image relative to pixels of the (N-1)th frame of image to obtain the deblurring convolution kernels.

11. The method of claim 10, wherein performing convolution processing on the seventh feature image to extract the deblurring information of the pixels of the (N-1)th frame of deblurred image relative to the pixel of the (N-1)th frame of image to obtain the deblurring convolution kernels comprises:

performing convolution processing on the seventh feature image to obtain an eighth feature image; and

regulating a number of channels of the eighth feature image to the first preset value by convolution processing to obtain the deblurring convolution kernels.

12. The method of claim 8, wherein performing decoding processing on the third feature image to obtain the Nth frame of deblurred image comprises:

performing deconvolution processing on the third feature image to obtain a ninth feature image;

performing convolution processing on the ninth feature image to obtain an Nth frame of decoded image; and

adding a pixel value of a first pixel of the Nth frame of image and a pixel value of a second pixel of the Nth frame of decoded image to obtain the Nth frame of deblurred image, a position of the first pixel in the Nth frame of image being the same as a position of the second pixel in the Nth frame of decoded image.

13. A video image processing device, comprising:

an acquisition unit, configured to acquire multiple frames of continuous video images, the multiple frames of continuous video images comprising an Nth frame of image, an (N-1)th frame of image and an (N-1)th frame of deblurred image and N being a positive integer;

a first processing unit, configured to obtain deblurring convolution kernels for the Nth frame of image based on the Nth frame of image, the (N-1)th frame of image and the (N-1)th frame of deblurred image; and

a second processing unit, configured to perform deblurring processing on the Nth frame of image through the deblurring convolution kernels to obtain an Nth frame of deblurred image.

14. The device of claim 13, wherein the first processing unit comprises:

a first convolution processing subunit, configured to perform convolution processing on pixels of an image to be processed to obtain the deblurring convolution kernels, the image to be processed being obtained by concatenating the Nth frame of image, the (N-1)th frame of image and the (N-1)th frame of deblurred image in a channel dimension.

15. The device of claim 14, wherein the first convolution processing subunit is configured to perform convolution processing on the image to be processed to extract motion information of pixels of the (N-1)th frame of image relative to pixels of the Nth frame of image to obtain alignment convolution kernels, the motion information comprising a velocity and a direction, and perform encoding processing on the alignment convolution kernels to obtain the deblurring convolution kernels.

16. The device of claim 14 or 15, wherein the second processing unit comprises: a second convolution processing subunit, configured to perform convolution processing on pixels of a feature image of the Nth frame of image through the deblurring convolution kernels to obtain a first feature image; and

a decoding processing subunit, configured to perform decoding processing on the first feature image to obtain the Nth frame of deblurred image.

17. The device of claim 16, wherein the second convolution processing subunit is configured to reshape the deblurring convolution kernels to make numbers of channels of the deblurring convolution kernels the same as a number of channels of the feature image of the Nth frame of image and perform convolution processing on the pixels of the feature image of the Nth frame of image through the reshaped deblurring convolution kernels to obtain the first feature image.

18. A processor, configured to execute the method of any one of claims 1-12.

19. An electronic device, comprising a processor, an input device, an output device and a memory, wherein the processor, the input device, the output device and the memory are connected with one another; the memory stores program instructions; and the program instructions are executed by the processor to enable the processor to execute the method of

any one of claims 1-12.

20. A computer-readable storage medium, in which a computer program is stored, the computer program comprising program instructions and the program instructions being executed by a processor of an electronic device to enable the processor to execute the method of any one of claims 1-12.