## CLAIMS

What is claimed is:

1. A method for processing images, comprising:

determining an image attribute of each image block of a plurality of image blocks in a to-be-processed image;

determining a filter model corresponding to each of the image blocks based on the image attribute of each of the image blocks; and

acquiring a filtered image of the to-be-processed image by filtering each of the image blocks by the filter model corresponding to each of the image blocks,

wherein the image attribute comprises a first hash value and a second hash value; wherein the first hash value is configured to indicate whether an image gradient corresponding to each of the image blocks weighs more on a first direction or a second direction; and the second hash value is configured to indicate a proximity between the image gradient corresponding to each of the image blocks in the first direction and the image gradient corresponding to each of the image blocks in the second direction.

2. The method according to claim 1, wherein determining the image attribute of each image block of the plurality of image blocks in the to-be-processed image comprises:

calculating, based on the image gradient of each of the image blocks in the first direction and the image gradient of each of the image blocks in the second direction, a square value of the image gradient corresponding to each of the image blocks in the first direction, a square value of the image gradient corresponding to each of the image blocks in the second direction, and a product value of the image gradient corresponding to each of the image blocks in the first direction and the image gradient corresponding to each of the image blocks in the second direction; and

acquiring the first hash value and the second hash value corresponding to each of the image blocks by calculating the square value of the image gradient corresponding to the first direction, the square value of the image gradient corresponding to the second direction, and the product value of the image gradient corresponding to the first direction and the image gradient corresponding to the second direction based on an integral image algorithm.

3. The method according to claim 1, wherein determining the filter model corresponding to each of the image blocks based on the image attribute of each of the image blocks comprises:

determining a bucket sequence number based on the first hash value and the second hash value corresponding to each of the image blocks; and

determining the filter model corresponding to each of the image blocks based on the bucket sequence number.

4. The method according to any one of claims 1 to 3, further comprising:

determining the filter model of each image block according to an encoding noise intensity of the to-be-processed image; and

acquiring the filtered image of the to-be-processed image by filtering each of the image blocks by the filter model corresponding to each of the image blocks comprises:

acquiring the filtered image of the to-be-processed image by filtering each of the image blocks with a target model corresponding to each of the image blocks, wherein the target model corresponding to each of the image blocks comprises the filter model of each of the image blocks determined according to the encoding noise intensity of the to-be-processed image and the filter model corresponding to each of the image blocks determined based on the image attribute of each of the image blocks.

5. The method according to claim 4, wherein determining the encoding noise intensity of the to-be-processed image comprises:

acquiring a quality parameter of video encoding corresponding to the to-be-processed image; and

determining the encoding noise intensity of the to-be-processed image based on the quality parameter.

6. The method according to any one of claims 1 to 3, further comprising:

acquiring a binarized image of the to-be-processed image by binarizing the to-be-processed image.

7. The method according to claim 6, wherein acquiring the binarized image of the to-be-processed image by binarizing the to-be-processed image comprises:

acquiring a text boundary image by performing Laplace filtering on the to-be-processed image;

acquiring a first image by performing threshold segmentation on the text boundary image based on a preset pixel threshold, wherein the first image is an image with a non-text boundary region removed from the text boundary image; and

acquiring the binarized image by performing a morphological close operation on the first image.

8. The method according to claim 7, wherein upon acquiring the binarized image, the method further comprises:

performing mean filtering on the binarized image.

9. The method according to claim 7, wherein acquiring the binarized image by performing the morphological close operation on the first image comprises:

acquiring a dilated image by dilating the first image; and

acquiring the binarized image by eroding the dilated image.

10. The method according to claim 7, wherein acquiring the first image by performing threshold segmentation on the text boundary image based on the preset pixel threshold comprises:

comparing a pixel value corresponding to each pixel point in the text boundary image with the preset pixel threshold;

adjusting the pixel value corresponding to the pixel point greater than the pixel threshold to a first pixel value;

adjusting the pixel value corresponding to the pixel point less than or equal to the pixel threshold to a second pixel value; and

determining the text boundary image with the pixel values adjusted as the first image.

11. The method according to claim 10, further comprising:

determining a ratio of a difference value between the first pixel value and the pixel value of the binarized image to the first pixel value as a first weight;

determining a ratio of the pixel value of the binarized image to the first pixel value as a second weight; and

acquiring a denoised image of the to-be-processed image by adding a product value of the pixel value of the filtered image and the first weight to a product value of the pixel value of the to-be-processed image and the second weight.

12. The method according to any one of claims 1 to 3, wherein training of the filter model comprises:

acquiring a high-definition image of a first preset size and a low-definition image carrying an encoding noise, wherein the high-definition image and the low-definition image have a same resolution;

extracting a plurality of image blocks of a second preset size from the high-definition image and the low-definition image to compose a first matrix and a second matrix respectively, wherein the second preset size is less than the first preset size; and

acquiring the filter model based on the first matrix and the second matrix according to a normal equation of a Least Square method.

13. The method according to any one of claims 1 to 3, wherein the filter model and the image block have a same size.

14. The method according to any one of claims 1 to 3, wherein

prior to determining the filter model corresponding to each of the image blocks based on the image attribute of each of the image blocks, the method further comprises:

determining a plurality of filter models corresponding to the to-be-processed image according to the encoding noise intensity of the to-be-processed image; and

determining the filter model corresponding to each of the image blocks based on the image attribute of each of the image blocks comprises:

determining the filter model corresponding to each of the image blocks from the plurality of filter models corresponding to the to-be-processed image based on the image attribute of each of the image blocks in the to-be-processed image.

15. A method for processing videos on a mobile terminal, comprising:

decoding a to-be-processed video pulled from a video stream;

extracting a video frame from the to-be-processed video;

acquiring a filtered image corresponding to the video frame by processing the video frame as a to-be-processed image by the method as defined in any one of claims 1 to 14; and

playing the video with the filtered image.

16. An apparatus for processing images, comprising:

a first determining module, configured to determine an image attribute of each image block of a plurality of image blocks in a to-be-processed image;

a second determining module, configured to determine a filter model corresponding to each of the image blocks based on the image attribute of each of the image blocks; and

a first filtering module, configured to acquire a filtered image of the to-be-processed image by filtering each of the image blocks by the filter model corresponding to each of the image blocks,

wherein the image attribute comprises a first hash value and a second hash value; wherein the first hash value is configured to indicate whether an image gradient corresponding to each of the image blocks weighs more on a first direction or a second direction; and the second hash value is configured to indicate a proximity between the image gradient corresponding to each of the image blocks in the first direction and the image gradient corresponding to each of the image blocks in the second direction.

17. An apparatus for processing videos on a mobile terminal, comprising:

a decoding module, configured to decode a to-be-processed video pulled from a video stream;

an extracting module, configured to extract a video frame from the to-be-processed video;

a processing module, configured to acquire a filtered image corresponding to the video frame by processing the video frame as a to-be-processed image by the method as defined in any one of claims 1 to 14; and

a playing module, configured to play the video with the filtered image.

18. A computer device, comprising:

at least one processor; and

a memory, configured to store at least one program;

wherein the at least one processor, when running the at least one program, is caused to perform the method for processing images as defined in any one of claims 1 to 14, or to perform the method for processing videos on the mobile terminal as defined in claim 15.

19. A non-volatile computer-readable storage medium storing a computer program, wherein the computer program, when run by a processor, causes the processor to perform the method for processing images as defined in any one of claims 1 to 14, or perform the method for processing videos on the mobile terminal as defined in claim 15.