WHAT IS CLAIMED IS:

1. A method for video decoding in a video decoder, comprising:

receiving an image or video comprising one or more blocks;

decoding a first post-filtering parameter in the image or video corresponding to the one or more blocks to be reconstructed, the first post-filtering parameter applying to at least one of the one or more blocks, and the first post-filtering parameter having been updated by a post-filtering module in a post-filtering neural network (NN) that is trained based on a training dataset;

determining the post-filtering NN in the video decoder corresponding to the one or more blocks based on the first post-filtering parameter; and

decoding the one or more blocks based on the determined post-filtering NN corresponding to the one or more blocks;

wherein a number of layers in the post-filtering NN is dependent on a step size or a number of steps corresponding to different blocks in the one or more blocks.

2. The method of claim 1, further comprising

decoding a second post-filtering parameter in the image or video corresponding to the one or more blocks; and

determining the post-filtering NN further based on the second post-filtering parameter, wherein

the second post-filtering parameter applies to a second block in the one or more blocks,

the second block is different from the at least one of the one or more blocks, and

the second post-filtering parameter has been updated by the post-filtering module in the post-filtering NN.

3. The method of claim 1, wherein

the first post-filtering parameter corresponds to a second image to be reconstructed, and

the method further includes decoding the second image based on the determined post-filtering NN.

4. The method of claim 2, wherein the first post-filtering parameter is different from the second post-filtering parameter, the first post-filtering parameter is adaptive to content of a first block of the one or more blocks, and the second post-filtering parameter is adaptive to content of the second block.

5. The method of claim 1, wherein the first post-filtering parameter is updated based on a bias term or a weight coefficient in the post-filtering NN.

6. The method of claim 1, wherein

the post-filtering NN is configured with initial parameters, and

the determining the post-filtering NN includes updating at least one of the initial parameters with the first post-filtering parameter.

7. The method of claim 6, wherein

coding information corresponding to the one or more blocks indicates a difference between the first post-filtering parameter and the one of the initial parameters, and

the method further includes determining the first post-filtering parameter according to a sum of the difference and the one of the initial parameters.

8. The method of claim 1, wherein the first post-filtering parameter is updated in (i) a single layer of the post-filtering NN, (ii) multiple layers of the post-filtering NN, or (iii) all layers of the post-filtering NN.

9. An apparatus for video decoding, comprising:

processing circuitry configured to:

receive an image or video comprising one or more blocks;

decode a first post-filtering parameter in the image or video corresponding to the one or more blocks to be reconstructed, the first post-filtering parameter applying to at least one of the one or more blocks, and the first post-filtering parameter having been updated by a post-filtering module in a post-filtering neural network (NN) that is trained based on a training dataset;

determine the post-filtering NN in a video decoder corresponding to the one or more blocks based on the first post-filtering parameter; and

decode the one or more blocks based on the determined post-filtering NN corresponding to the one or more blocks;

wherein a number of layers in the post-filtering NN is dependent on a step size or a number of steps corresponding to different blocks in the one or more blocks.

10. The apparatus of claim 9, wherein the processing circuitry is configured to:

decode a second post-filtering parameter in the image or video corresponding to the one or more blocks; and

determine the post-filtering NN further based on the second post-filtering parameter, wherein

the second post-filtering parameter applies to a second block in the one or more blocks,

the second block is different from the at least one of the one or more blocks, and

the second post-filtering parameter has been updated by the post-filtering module in the post-filtering NN.

11. The apparatus of claim 9, wherein

the first post-filtering parameter corresponds to a second image to be reconstructed, and

the processing circuitry is configured to decode the second image based on the determined post-filtering NN.

12. The apparatus of claim 10, wherein the first post-filtering parameter is different from the second post-filtering parameter, the first post-filtering parameter is adaptive to content of a first block of the one or more blocks, and the second post-filtering parameter is adaptive to content of the second block.

13. The apparatus of claim 9, wherein the first post-filtering parameter is updated based on a bias term or a weight coefficient in the post-filtering NN.

14. The apparatus of claim 9, wherein

the post-filtering NN is configured with initial parameters, and

the processing circuitry is configured to update at least one of the initial parameters with the first post-filtering parameter.

15. The apparatus of claim 14, wherein

coding information corresponding to the one or more blocks indicates a difference between the first post-filtering parameter and the one of the initial parameters, and

the processing circuitry is configured to determine the first post-filtering parameter according to a sum of the difference and the one of the initial parameters.

16. The apparatus of claim 9, wherein the first post-filtering parameter is updated in (i) a single layer of the post-filtering NN, (ii) multiple layers of the post-filtering NN, or (iii) all layers of the post-filtering NN.

17. A non-transitory computer-readable storage medium storing a program executable by at least one processor to perform:

receiving an image or video comprising one or more blocks;

decoding a first post-filtering parameter in the image or video corresponding to the one or more blocks to be reconstructed, the first post-filtering parameter applying to at least one of the one or more blocks, and the first post-filtering parameter having been updated by a

post-filtering module in a post-filtering neural network (NN) that is trained based on a training dataset;

determining the post-filtering NN in a video decoder corresponding to the one or more blocks based on the first post-filtering parameter; and

decoding the one or more blocks based on the determined post-filtering NN corresponding to the one or more blocks;

wherein a number of layers in the post-filtering NN is dependent on a step size or a number of steps corresponding to different blocks in the one or more blocks.

18. The non-transitory computer-readable storage medium of claim 17, wherein

the program executable by the at least one processor performs:

decoding a second post-filtering parameter in the image or video corresponding to the one or more blocks, and

determining the post-filtering NN further based on the second post-filtering parameter, and

the second post-filtering parameter applies to a second block in the one or more blocks,

the second block is different from the at least one of the one or more blocks, and

the second post-filtering parameter has been updated by the post-filtering module in the post-filtering NN.

19. The non-transitory computer-readable storage medium of claim 17, wherein

the first post-filtering parameter corresponds to a second image to be reconstructed, and

the program executable by the at least one processor performs: decoding the second image based on the determined post-filtering NN.

20. The non-transitory computer-readable storage medium of claim 18, wherein the first post-filtering parameter is different from the second post-filtering parameter, the first post-filtering parameter is adaptive to content of a first block of the one or more blocks, and the second post-filtering parameter is adaptive to content of the second block.