

CLAIMS

1. A method of processing video data, the method comprising:
obtaining, by one or more processors implemented in circuitry, unfiltered reference samples for an area of a picture of the video data;
automatically inferring, by the one or more processors, that intra-reference sample smoothing of the unfiltered reference samples for chroma samples is disabled in response to determining that the video data is in a YUV 4:2:0 format or is in a YUV 4:4:4 format; and
generating, by the one or more processors, using intra-prediction, chroma samples in the determined YUV 4:2:0 format or YUV 4:4:4 format of a predicted block for a block of the picture based on the unfiltered reference samples when generating the chroma components in the YUV 4:2:0 format or in the YUV 4:4:4 format, respectively.
2. The method of claim 1, further comprising, in response to determining to enable intra-reference sample smoothing for generating luma samples:
performing, by the one or more processors, one or more filter operations on the unfiltered reference samples to generate filtered reference samples; and
generating, by the one or more processors, using intra-prediction, luma samples for the block of the picture based on the filtered reference samples.
3. The method of claim 2, wherein performing the one or more filter operations comprises performing one or more deblocking operations on the unfiltered reference samples.
4. The method of claim 1, comprising:
decoding, by the one or more processors, a residual block for the block of video data; and
combining, by the one or more processors, the predicted block and the residual block to decode an unfiltered reconstructed block for the block of video data.
5. The method of claim 4, further comprising storing, by the one or more processors, the unfiltered reconstructed block at a decoded picture buffer.

6. The method of claim 4, further comprising:
generating, by the one or more processors, a filtered reconstructed block for the block of video data, wherein generating the filtered reconstructed block comprises performing one or more filter operations on the unfiltered reconstructed block; and
storing, by the one or more processors, the filtered reconstructed block at a decoded picture buffer.
7. The method of claim 1, comprising:
generating, by the one or more processors, a residual block for the block of video data based on differences between the block of video data and the predicted block; and
encoding, by the one or more processors, the residual block.
8. The method of claim 7, further comprising:
combining, by the one or more processors, the predicted block and the residual block to decode an unfiltered reconstructed block for the block of video data; and
storing, by the one or more processors, the unfiltered reconstructed block at a decoded picture buffer.
9. The method of claim 7, further comprising:
combining, by the one or more processors, the predicted block and the residual block to decode an unfiltered reconstructed block for the block of video data;
generating, by the one or more processors, a filtered reconstructed block for the block of video data, wherein generating the filtered reconstructed block comprises performing one or more filter operations on the unfiltered reconstructed block; and
storing, by the one or more processors, the filtered reconstructed block at a decoded picture buffer.

10. A device for processing video data, the device comprising:
 - a memory configured to store video data; and
 - one or more processors implemented in circuitry and configured to:
 - obtain unfiltered reference samples for an area of a picture of the video data;
 - automatically infer that intra-reference sample smoothing of the unfiltered reference samples for chroma samples is disabled in response to a determination that the video data is in a YUV 4:2:0 format or is in a YUV 4:4:4 format; and
 - generate, using intra-prediction, chroma samples in the determined YUV 4:2:0 format or YUV 4:4:4 format of a predicted block for a block of the picture based on the unfiltered reference samples when generating the chroma components in the YUV 4:2:0 format or in the YUV 4:4:4 format, respectively.
11. The device of claim 10, wherein the one or more processors are further configured to, in response to determining to enable intra-reference sample smoothing for generating luma samples:
 - perform one or more filter operations on the unfiltered reference samples to generate filtered reference samples; and
 - generate, using intra-prediction, luma samples for the block of the picture based on the filtered reference samples.
12. The device of claim 11, wherein, to perform the one or more filter operations, the one or more processors are configured to perform one or more deblocking operations on the unfiltered reference samples.
13. The device of claim 10, wherein the one or more processors are further configured to:
 - decode a residual block for the block of video data; and
 - combine the predicted block and the residual block to decode an unfiltered reconstructed block for the block of video data.
14. The device of claim 13, wherein the one or more processors are further configured to store the unfiltered reconstructed block at a decoded picture buffer.

15. The device of claim 13, wherein the one or more processors are further configured to:

- generate a filtered reconstructed block for the block of video data, wherein generating the filtered reconstructed block comprises performing one or more filter operations on the unfiltered reconstructed block; and
- store the filtered reconstructed block at a decoded picture buffer.

16. The device of claim 10, wherein the one or more processors are further configured to:

- generate a residual block for the block of video data based on differences between the block of video data and the predicted block; and
- encode the residual block.

17. The device of claim 16, wherein the one or more processors are further configured to:

- combine the predicted block and the residual block to decode an unfiltered reconstructed block for the block of video data; and
- store the unfiltered reconstructed block at a decoded picture buffer.

18. The device of claim 16, wherein the one or more processors are further configured to:

- combine the predicted block and the residual block to decode an unfiltered reconstructed block for the block of video data;
- generate a filtered reconstructed block for the block of video data, wherein generating the filtered reconstructed block comprises performing one or more filter operations on the unfiltered reconstructed block; and
- store the filtered reconstructed block at a decoded picture buffer.

19. The device of claim 10, wherein the device comprises one or more of a camera, a computer, a mobile device, a broadcast receiver device, or a set-top box.

20. A non-transitory computer-readable storage medium having stored thereon instructions that, when executed, cause one or more processors to:

obtain unfiltered reference samples for an area of a picture of the video data; automatically infer that intra-reference sample smoothing of the unfiltered reference samples for chroma samples is disabled in response to a determination that the video data is in a YUV 4:2:0 format or is in a YUV 4:4:4 format; and

generate, using intra-prediction, chroma samples in the determined YUV 4:2:0 format or YUV 4:4:4 format of a predicted block for a block of the picture based on the unfiltered reference samples when generating the chroma components in the YUV 4:2:0 format or in the YUV 4:4:4 format, respectively.

21. A device for coding video data, the device comprising:

Means for obtaining unfiltered reference samples for an area of a picture of the video data;

means for automatically infer that intra-reference sample smoothing of the unfiltered reference samples for chroma samples is disabled in response to a determination that the video data is in a YUV 4:2:0 format or is in a YUV 4:4:4 format; and

means for generating, using intra-prediction, chroma samples in the determined YUV 4:2:0 format or YUV 4:4:4 format of a predicted block for a block of the picture based on the unfiltered reference samples when generating the chroma components in a YUV 4:2:0 format or in a YUV 4:4:4 format, respectively.