Amended Set of Claims 1 to 26

1. A method for coding video data, the method comprising:

performing a padding operation that processes a set of border pixels according to an order that starts at a bottom-left border pixel and proceeds through the border pixels sequentially to a top-right border pixel, wherein when the padding operation processes an unavailable border pixel other than the bottom-left border pixel, the padding operation assigns a value to the unavailable border pixel based on a value of a border pixel previously processed by the padding operation without searching for a next available border pixel; and

generating an intra-predicted video block based on the border pixels.

2. The method of claim 1, wherein performing the padding operation comprises:

determining whether a current border pixel is available; and

assigning to the current border pixel a value of a border pixel that is immediately before the current border pixel according to the order.

3. The method of claim 2, wherein determining whether the current border pixel is available comprises determining that the current border pixel is unavailable when the current border pixel is associated with an inter-predicted coding unit (CU) and constrained intra-prediction is enabled.

4. The method of claim 1, wherein performing the padding operation comprises:

determining whether the bottom-left border pixel is available; and

assigning a default value to the bottom-left border pixel in response to determining that the bottom-left border pixel is unavailable.

5. The method of claim 1, wherein performing the padding operation comprises:

determining whether the bottom-left border pixel is available; and

assigning a value of a next available border pixel to the bottom-left border pixel in response to determining that the bottom-left border pixel is unavailable.

6. The method of claim 1,

wherein performing the padding operation comprises:

for x = -1, y = nS*2-2...-1, substituting a value of p[x, y+1] for a value of p[x, y] if p[x, y] is an unavailable border pixel; and

for x = 0..nS*2-1, y-1, substituting a value of p[x-1, y] for a value of p[x, y] if p[x, y] is an unavailable border pixel,

wherein nS is equal to a width or height of the intra-predicted video block, p is a two-dimensional array of samples, and p[0,0] is a top-left luma sample of the intra-predicted video block.

7. The method of claim 1, wherein the method is performed during an encoding process, the method further comprising generating encoded video data based on the intra-predicted video block.

8. The method of claim 7, further comprising generating residual data based at least in part on the intra-predicted video block.

9. The method of claim 1, wherein the method is performed during a decoding process, the method further comprising generating decoded video data based on the intra-predicted video block.

10. The method of claim 9, further comprising reconstructing a decoded video block based at least in part on the intra-predicted video block and a residual video block.

11. A video coding apparatus that comprises one or more processors configured to:

perform a padding operation that processes a set of border pixels according to an order that starts at a bottom-left border pixel and proceeds through the border pixels sequentially to a top-right border pixel, wherein when the padding operation processes an unavailable border pixel other than the bottom-left border pixel, the padding operation assigns a value to the unavailable border pixel based on a value of a border pixel previously processed by the padding operation without searching for a next available border pixel; and

generate an intra-predicted video block based on the border pixels.

12. The video coding apparatus of claim 11, wherein the one or more processors are configured to perform the padding operation such that the one or more processors:

determine whether a current border pixel is available; and

assign to the current border pixel a value of a border pixel that is immediately before the current border pixel according to the order.

13. The video coding apparatus of claim 12, wherein the one or more processors are configured to determine whether the current border pixel is available at least in part by determining that the current border pixel is unavailable when the current border pixel is associated with an inter-predicted coding unit (CU) and constrained intra-prediction is enabled.

14. The video coding apparatus of claim 11, wherein the one or more processors are configured to perform the padding operation such that the one or more processors:

determine whether the bottom-left border pixel is available; and

assign a default value to the bottom-left border pixel in response to determining that the bottom-left border pixel is available.

15. The video coding apparatus of claim 11, wherein the one or more processors are configured to perform the padding operation such that the one or more processors:

determine whether the bottom-left border pixel is available; and

assign a value of a next available border pixel to the bottom-left border pixel in response to determining that the bottom-left border pixel is unavailable.

16. The video coding apparatus of claim 11, wherein the one or more processors are configured to perform the padding operation such that:

for x = -1, y = nS*2-2...-1, the one or more processors substitute a value of p[x, y+1] for a value of p[x, y] if p[x, y] is an unavailable border pixel; and

for x = 0..nS*2-1, y-1, the one or more processors substitute a value of p[x-1, y] for a value of p[x, y] if p[x, y] is an unavailable border pixel,

wherein nS is equal to a width or height of the intra-predicted video block, p is a two-dimensional array of samples, and p[0,0] is a top-left luma sample of the intra-predicted video block.

17. The video coding apparatus of claim 11, wherein the video coding apparatus comprises a video encoder and the one or more processors are configured to generate encoded video data based on the intra-predicted video block.

18. The video coding apparatus of claim 17, wherein the one or more processors are configured to generate residual data based at least in part on the intra-predicted video block.

19. The video coding apparatus of claim 11, wherein the video coding apparatus comprises a video decoder and the one or more processors are configured to generate decoded video data based on the intra-predicted video block.

20. The video coding apparatus of claim 19, wherein the one or more processors are configured to reconstruct a decoded video block based on the intra-predicted video block and a residual video block.

21. A video coding apparatus comprising:

means for performing a padding operation that processes a set of border pixels according to an order that starts at a bottom-left border pixel and proceeds through the border pixels sequentially to a top-right border pixel, wherein when the padding operation processes an unavailable border pixel other than the bottom-left border pixel, the padding operation assigns a value to the unavailable border pixel based on a value of a border pixel previously processed by the padding operation without searching for a next available border pixel; and

means for generating an intra-predicted video block based on the border pixels.

22. The video coding apparatus of claim 21, wherein the means for performing the padding operation comprises:

means for determining whether a current border pixel is available; and

means for assigning to the current border pixel a value of a border pixel that is immediately before the current border pixel according to the order.

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23. The video coding apparatus of claim 22, wherein the means for determining whether the current border pixel is available comprises means for determining that the current border pixel is unavailable when the current border pixel is associated with an inter-predicted coding unit (CU) and constrained intra-prediction is enabled.

24. A computer program product that comprises one or more computer-readable storage media that store computer-executable instructions that, when executed, cause one or more processors to:

perform a padding operation that processes a set of border pixels according to an order that starts at a bottom-left border pixel and proceeds through the border pixels sequentially to a top-right border pixel, wherein when the padding operation processes an unavailable border pixel other than the bottom-left border pixel, the padding operation assigns a value to the unavailable border pixel based on a value of a pixel previously processed by the padding operation without searching for a next available border pixel; and

generate an intra-predicted video block based on the border pixels.

25. The computer program product of claim 24, wherein the computer-executable instructions cause the one or more processors to:

determine whether a current border pixel is available; and

assign to the current border pixel a value of a border pixel that is immediately before the current border pixel according to the order.

26. The computer program product of claim 25, wherein the computer-executable instructions cause the one or more processors to determine that the current border pixel is unavailable when the current border pixel is associated with an inter-predicted coding unit (CU) and constrained intra-prediction is enabled.

THE CLAIMS

1. A method for coding video data, the method comprising:

performing a padding operation that processes a set of border pixels according to an order that starts at a bottom-left border pixel and proceeds through the border pixels sequentially to a top-right border pixel, wherein when the padding operation processes an unavailable border pixel other than the bottom-left border pixel and other than the top-right border pixel, the padding operation assigns a value to the unavailable border pixel based on a value of a border pixel previously processed by the padding operation without searching for a next available border pixel; and

generating, based on the border pixels, an intra-predicted video block.

2. The method of claim 1, wherein performing the padding operation comprises:

determining whether a current border pixel is available; and

assigning to the current border pixel a value of a border pixel that is immediately before the current border pixel according to the order.

3. The method of claim 2, wherein determining whether the current border pixel is available comprises determining that the current border pixel is unavailable when the current border pixel is associated with an inter-predicted coding unit (CU) and constrained intra-prediction is enabled.

4. The method of claim 1, wherein performing the padding operation comprises:

determining whether the bottom-left border pixel is available; and

assigning a default value to the bottom-left border pixel in response to determining that the bottom-left border pixel is unavailable.

5. The method of claim 1, wherein performing the padding operation comprises:

determining whether the bottom-left border pixel is available; and

assigning a value of a next available border pixel to the bottom-left border pixel in response to determining that the bottom-left border pixel is unavailable.

6. The method of claim 1,

wherein performing the padding operation comprises:

for x = -1, y = nS*2-2...-1, substituting a value of p[x, y+1] for a value of p[x, y] if p[x, y] is an unavailable border pixel; and

for x = 0..nS*2-1, y-1, substituting a value of p[x-1, y] for a value of p[x, y] if p[x, y] is an unavailable border pixel,

wherein nS is equal to a width or height of the intra-predicted video block, p is a two-dimensional array of samples, and p[0,0] is a top-left luma sample of the intra-predicted video block.

7. The method of claim 1, wherein the method is performed during an encoding process, the method further comprising generating encoded video data based on the intra-predicted video block.

8. The method of claim 7. further comprising generating residual data based at least in part on the intra-predicted video block.

9. The method of claim 1, wherein the method is performed during a decoding process, the method further comprising generating decoded video data based on the intra-predicted video block.

10. The method of claim 9, further comprising reconstructing a decoded video block based at least in part on the intra-predicted video block and a residual video block.

11. A video coding apparatus that comprises:

a storage medium storing video data; and

one or more processors configured to:

perform a padding operation that processes a set of border pixels according to an order that starts at a bottom-left border pixel and proceeds through the border pixels sequentially to a top-right border pixel, wherein when the padding operation processes an unavailable border pixel other than

the bottom-left border pixel and other than the top-right border pixel, the padding operation assigns a value to the unavailable border pixel based on a value of a border pixel previously processed by the padding operation without searching for a next available border pixel; and

generate, based on the border pixels, an intra-predicted video block of the video data.

12. The video coding apparatus of claim 11, wherein the one or more processors are configured to perform the padding operation such that the one or more processors:

determine whether a current border pixel is available; and

assign to the current border pixel a value of a border pixel that is immediately before the current border pixel according to the order.

13. The video coding apparatus of claim 12, wherein the one or more processors are configured to determine whether the current border pixel is available at least in part by determining that the current border pixel is unavailable when the current border pixel is associated with an inter-predicted coding unit (CU) and constrained intra-prediction is enabled.

14. The video coding apparatus of claim 11, wherein the one or more processors are configured to perform the padding operation such that the one or more processors:

determine whether the bottom-left border pixel is available; and

assign a default value to the bottom-left border pixel in response to determining that the bottom-left border pixel is available.

15. The video coding apparatus of claim 11, wherein the one or more processors are configured to perform the padding operation such that the one or more processors:

determine whether the bottom-left border pixel is available; and

assign a value of a next available border pixel to the bottom-left border pixel in response to determining that the bottom-left border pixel is unavailable.

16. The video coding apparatus of claim 11, wherein the one or more processors

are configured to perform the padding operation such that:

for x = -1, y = nS*2-2...-1, the one or more processors substitute a value of p[x, y+1] for a value of p[x, y] if p[x, y] is an unavailable border pixel; and

for x = 0..nS*2-1, y-1, the one or more processors substitute a value of p[x-1, y] for a value of p[x, y] if p[x, y] is an unavailable border pixel,

wherein nS is equal to a width or height of the intra-predicted video block, p is a two-dimensional array of samples, and p[0,0] is a top-left luma sample of the intra-predicted video block.

17. The video coding apparatus of claim 11, wherein the video coding apparatus comprises a video encoder and the one or more processors are configured to generate encoded video data based on the intra-predicted video block.

18. The video coding apparatus of claim 17, wherein the one or more processors are configured to generate residual data based at least in part on the intra-predicted video block.

19. The video coding apparatus of claim 11, wherein the video coding apparatus comprises a video decoder and the one or more processors are configured to generate decoded video data based on the intra-predicted video block.

20. The video coding apparatus of claim 19, wherein the one or more processors are configured to reconstruct a decoded video block based on the intra-predicted video block and a residual video block.

21. A video coding apparatus comprising:

means for performing a padding operation that processes a set of border pixels according to an order that starts at a bottom-left border pixel and proceeds through the border pixels sequentially to a top-right border pixel, wherein when the padding operation processes an unavailable border pixel other than the bottom-left border pixel and other than the top-right border pixel, the padding operation assigns a value to the

unavailable border pixel based on a value of a border pixel previously processed by the padding operation without searching for a next available border pixel; and

means for generating, based on the border pixels, an intra-predicted video block.

22. The video coding apparatus of claim 21, wherein the means for performing the padding operation comprises:

means for determining whether a current border pixel is available; and

means for assigning to the current border pixel a value of a border pixel that is immediately before the current border pixel according to the order.

23. The video coding apparatus of claim 22, wherein the means for determining whether the current border pixel is available comprises means for determining that the current border pixel is unavailable when the current border pixel is associated with an inter-predicted coding unit (CU) and constrained intra-prediction is enabled.

24. A computer program product that comprises one or more computer-readable storage media that store computer-executable instructions that, when executed, cause one or more processors to perform a method according to any one of claims 1 to 10.

25. The video coding apparatus of claim 11, wherein the video coding apparatus comprises at least one of:

an integrated circuit;

a microprocessor; or

a wireless handset.

26. The video coding apparatus of claim 19, further comprising a display configured to display the decoded video data.

27. The video coding apparatus of claim 17, further comprising a camera configured to capture the video data.