

CLAIMS

What is claimed is:

1. A video coding intra-frame prediction method, wherein, the method comprises:

performing a bidirectional prediction comprising an intra-frame left and upper direction prediction and an intra-frame right and lower direction prediction on a current coding block during video coding,

wherein,

when performing video coding on two horizontally adjacent coding blocks simultaneously, wherein the first one coding block from left to right in the two coding blocks is a first coding block, and the second one coding block from left to right in the two coding blocks is a second coding block,

performing the intra-frame left and upper direction prediction on the first coding block based on the lowermost pixel row of a coding block adjacent to the upper of the first coding block and the rightmost pixel column of a coding block adjacent to the left of the first coding block, performing the intra-frame right and lower direction prediction based on the leftmost pixel column of the second coding block, and weighting the intra-frame left and upper direction prediction and the right and lower direction prediction; and

performing the intra-frame left and upper direction prediction on the second coding block based on the lowermost pixel row of a coding block adjacent to the upper of the second coding block and the rightmost pixel column of the first coding block, and not performing the intra-frame right and lower prediction.

2. The method according to claim 1, wherein, the bidirectional prediction further comprises:

performing the intra-frame left and upper direction prediction and the intra-frame right and lower direction prediction on the current coding block and performing weighting during video coding.

3. The method according to claim 1, wherein,

the intra-frame left and upper direction prediction on the current coding block is performed based on a rightmost pixel column of a coding block adjacent to the left of the current coding block and a lowermost pixel row of a coding block adjacent to the upper of the current coding block; wherein, when one of the corresponding pixel column or pixel row is not present, the intra-frame left and upper prediction is performed based only on the present pixel row or pixel column;

the intra-frame right and lower direction prediction on the current coding block is performed based on a leftmost pixel column of a coding block adjacent to the right of the current coding block and a uppermost pixel row of a coding block adjacent to the lower of the current coding block; wherein, when one of the corresponding pixel column or pixel row is not present, the intra-frame right and lower prediction is performed based only on the present pixel row or pixel column; and

weighting a prediction in which both of the intra-frame left and upper direction prediction and the intra-frame right and lower direction prediction are performed.

4. The method according to claim 3, wherein,

when simultaneously performing the video coding on four coding blocks that are adjacent vertically and horizontally, wherein a coding block at upper left of the four coding blocks is an A coding block, a coding block at upper right of the four coding blocks is a B coding block, a coding block at lower left of the four coding blocks is a C coding block, and a coding block at lower right of the four coding blocks is a D coding block,

performing the intra-frame left and upper direction prediction on the A coding block based on the lowermost pixel row of a coding block adjacent to the upper of the A coding block and the rightmost pixel column of a coding block adjacent to the left of the A coding block, performing the intra-frame right and lower direction prediction on the A coding block based on the leftmost pixel column of the B coding block and the uppermost pixel row of the C coding block, and weighting the intra-frame left and upper direction prediction and the right and lower direction prediction;

performing the intra-frame left and upper direction prediction on the B coding block based on the lowermost pixel row of a coding block adjacent to the upper of the B coding block and the rightmost pixel column of the A coding block, performing the intra-frame right and lower direction prediction on the B coding block based on the uppermost pixel row of the D coding block, and weighting the intra-frame left and upper direction prediction and the right and lower direction prediction;

performing the intra-frame left and upper direction prediction on the C coding block based on the lowermost pixel row of the A coding block and the rightmost pixel column of a coding block adjacent to the left of the C coding block, and performing the intra-frame right and lower direction prediction on the C coding block based on

the leftmost pixel column of the D coding block, and weighting the intra-frame left and upper direction prediction and the right and lower direction prediction; and performing the intra-frame left and upper direction prediction on the D coding block based on the lowermost pixel row of the B coding block and the rightmost pixel column of the C coding block, and not performing the intra-frame right and lower prediction.

5. An electronic device, wherein, the electronic device comprises: at least one processor, a communication interface, a memory, and a communication bus, wherein the at least one processor, the communication interface, and the memory are communicated with each other via the communication bus;

the memory is used for storing computer programs; and

the at least one processor is used for implementing the method according to claim 1 by executing the program stored on the memory.

6. A non-transitory computer readable storage medium, wherein, the computer readable storage medium stores instructions thereon, and when being executed on a computer, the instructions enable the computer to implement the method according to claim 1.

7. A video coding intra-frame prediction device, wherein, the device comprises: an intra-frame left and upper prediction unit used for performing an intra-frame left and upper direction prediction on a current coding block; and

an intra-frame right and lower prediction unit used for performing an intra-frame right and lower direction prediction on the current coding block.

wherein,

when performing video coding on two horizontally adjacent coding blocks simultaneously, wherein the first one coding block from left to right in the two coding blocks is a first coding block, and the second one coding block from left to right in the two coding blocks is a second coding block,

performing the intra-frame left and upper direction prediction on the first coding block based on the lowermost pixel row of a coding block adjacent to the upper of the first coding block and the rightmost pixel column of a coding block adjacent to the left of the first coding block, performing the intra-frame right and lower direction prediction based on the leftmost pixel column of the second coding block, and weighting the intra-frame left and upper direction prediction and the right and lower direction prediction; and

performing the intra-frame left and upper direction prediction on the second coding block based on the lowermost pixel row of a coding block adjacent to the upper of the second coding block and the rightmost pixel column of the first coding block, and not performing the intra-frame right and lower prediction.

8. The device according to claim 7, wherein, further comprises:

a weighting unit used for weighting the intra-frame left and upper direction prediction and the intra-frame right and lower direction prediction on the current coding block.

9. The device according to claim 7, wherein,

the intra-frame left and upper prediction unit is further used for performing the intra-frame left and upper direction prediction based on a rightmost pixel column of a coding block adjacent to the left of the current coding block and a lowermost pixel row of a coding block adjacent to the upper of the current coding block; wherein, when one of the corresponding pixel column or pixel row is not present, the intra-frame left and upper prediction is performed based only on the present pixel row or pixel column; and

the intra-frame right and lower prediction unit is further used for performing the intra-frame right and lower direction prediction based on a leftmost pixel column of a coding block adjacent to the right of the current coding block and a uppermost pixel row of a coding block adjacent to the lower of the current coding block; wherein, when one of the corresponding pixel column or pixel row is not present, the intra-frame right and lower prediction is performed based only on the present pixel row or pixel column.

10. The device according to claim 8, wherein,

the intra-frame left and upper prediction unit is further used for performing the intra-frame left and upper direction prediction based on a rightmost pixel column of a coding block adjacent to the left of the current coding block and a lowermost pixel row of a coding block adjacent to the upper of the current coding block; wherein, when one of the corresponding pixel column or pixel row is not present, the intra-frame left and upper prediction is performed based only on the present pixel row

or pixel column; and

the intra-frame right and lower prediction unit is further used for performing the intra-frame right and lower direction prediction based on a leftmost pixel column of a coding block adjacent to the right of the current coding block and a uppermost pixel row of a coding block adjacent to the lower of the current coding block; wherein, when one of the corresponding pixel column or pixel row is not present, the intra-frame right and lower prediction is performed based only on the present pixel row or pixel column.