Claims

1. An image decoding method performing inter prediction, the method comprising:

constructing a merge candidate list of a target block including a statistical merge candidate from a statistical merge candidate group;

determining a motion vector predictor from a selected merge candidate in the merge candidate list based on a candidate index;

deriving a motion vector by adjusting the motion vector predictor based on motion vector adjustment offset information; and

performing inter prediction for the target block based on the adjusted motion vector,

wherein the motion vector adjustment offset information comprises information on whether a motion vector adjustment offset is added to or subtracted from the motion vector,

the statistical merge candidate group includes one or more statistical merge candidates and a number of statistical merge candidates in the statistical merge candidate group cannot be larger than a predetermined maximum number of the statistical merge candidates,

the statistical merge candidate indicates inter-prediction information of a block that is decoded prior to the target block and the merge candidate list includes one or more statistical merge candidates in the statistical merge candidate group that are not immediately adjacent to the target block,

the statistical merge candidate group is updated after completion of decoding the target block by the following method:

when the inter-prediction information of the target block is not overlapped with any of the statistical merge candidates in the statistical merge candidate group, the statistical merge candidate group is updated by adding inter-prediction information of the target block as the first statistical merge candidate of the statistical merge candidate group and removing the last statistical merge candidate from the statistical merge candidate group and modifying the orders of the remained statistical merge candidates,

when the inter-prediction information of the target block is overlapped with any of the statistical merge candidates in the statistical merge candidate group, the statistical merge candidate group is updated by adding inter-prediction information of the target block as the first statistical

merge candidate of the statistical merge candidate group and removing the overlapped statistical merge candidate from the statistical merge candidate group and modifying the orders of the remained statistical merge candidates,

the statistical merge candidate group is initialized when the target block is the first block of a predetermined data unit.

2. The method of claim 1, wherein the motion vector adjustment offset information comprises information on an absolute value of the motion vector adjustment offset.

3. The method of claim 1, wherein the motion vector adjustment offset is applied for one among a x-component of the motion vector or a y-component of the motion vector predictor.

4. The method of claim 1, wherein the motion vector adjustment offset is determined differently based on a precision for the motion vector adjustment offset.

5. The method of claim 1, wherein, in case the motion candidate list comprises more than one candidate, the candidate index indicates a first candidate or a second candidate in the motion candidate list.

6. An image encoding method performing inter prediction, the method comprising:

constructing a merge candidate list of a target block including a statistical merge candidate from a statistical merge candidate group;

determining a motion vector predictor from a selected merge candidate in the merge candidate list, the motion vector being encoded using a candidate index;

deriving a motion vector by adjusting the motion vector predictor based on a motion vector adjustment offset, the motion vector adjustment offset being encoded as motion vector adjustment offset information; and

performing inter prediction for the target block based on the adjusted motion vector,

wherein the motion vector adjustment offset information comprises information on whether a motion vector adjustment offset is added to or subtracted from the motion vector,

the statistical merge candidate group includes one or more statistical merge candidates and a number of statistical merge candidates in the statistical merge candidate group cannot be larger than a predetermined maximum number of the statistical merge candidates,

the statistical merge candidate indicates inter-prediction information of a block that is encoded prior to the target block and the merge candidate list includes one or more statistical merge candidates in the statistical merge candidate group that are not immediately adjacent to the target block,

the statistical merge candidate group is updated after completion of encoding the target block by the following method:

when the inter-prediction information of the target block is not overlapped with any of the statistical merge candidates in the statistical merge candidate group, the statistical merge candidate group is updated by adding inter-prediction information of the target block as the first statistical merge candidate of the statistical merge candidate group and removing the last statistical merge candidate from the statistical merge candidate group and modifying the orders of the remained statistical merge candidates,

when the inter-prediction information of the target block is overlapped with any of the statistical merge candidates in the statistical merge candidate group, the statistical merge candidate group is updated by adding inter-prediction information of the target block as the first statistical merge candidate of the statistical merge candidate group and removing the overlapped statistical merge candidate from the statistical merge candidate group and modifying the orders of the remained statistical merge candidates,

the statistical merge candidate group is initialized when the target block is the first block of a predetermined data unit.

7. The method of claim 6, wherein the motion vector adjustment offset information comprises information on an absolute value of the motion vector adjustment offset.

8. The method of claim 6, wherein the motion vector adjustment offset is applied for one among a x-component of the motion vector or a y-component of the motion vector predictor.

9. The method of claim 6, wherein the motion vector adjustment offset is determined differently based on a precision for the motion vector adjustment offset.

10. The method of claim 6, wherein, in case the motion candidate list comprises more than one candidate, the candidate index indicates a first candidate or a second candidate in the motion candidate list.

11. A method of transmitting a bitstream generated by an image encoding method, the image encoding method comprising:

constructing a merge candidate list of a target block including a statistical merge candidate from a statistical merge candidate group;

determining a motion vector predictor from a selected merge candidate in the merge candidate list, the motion vector being encoded using a candidate index;

deriving a motion vector by adjusting the motion vector predictor based on a motion vector adjustment offset, the motion vector adjustment offset being encoded as motion vector adjustment offset information; and

performing inter prediction for the target block based on the adjusted motion vector,

wherein the motion vector adjustment offset information comprises information on whether a motion vector adjustment offset is added to or subtracted from the motion vector,

the statistical merge candidate group includes one or more statistical merge candidates and a number of statistical merge candidates in the statistical merge candidate group cannot be larger than a predetermined maximum number of the statistical merge candidates,

the statistical merge candidate indicates inter-prediction information of a block that is encoded prior to the target block and the merge candidate list includes one or more statistical merge candidates in the statistical merge candidate group that are not immediately adjacent to the target block,

the statistical merge candidate group is updated after completion of encoding the target block by the following method:

when the inter-prediction information of the target block is not overlapped with any of the statistical merge candidates in the statistical merge candidate group, the statistical merge candidate group is updated by adding inter-prediction information of the target block as the first statistical

merge candidate of the statistical merge candidate group and removing the last statistical merge candidate from the statistical merge candidate group and modifying the orders of the remained statistical merge candidates,

when the inter-prediction information of the target block is overlapped with any of the statistical merge candidates in the statistical merge candidate group, the statistical merge candidate group is updated by adding inter-prediction information of the target block as the first statistical merge candidate of the statistical merge candidate group and removing the overlapped statistical merge candidate from the statistical merge candidate group and modifying the orders of the remained statistical merge candidates,

the statistical merge candidate group is initialized when the target block is the first block of a predetermined data unit.