CLAIMS

What is Claimed:

1. An apparatus for video decoding, comprising:

a processor configured to:

determine that bi-directional optical flow (BDOF) is enabled;

determine that bi-prediction with coding unit (CU) weights is enabled for a current coding block;

identify a weight indication of bi-prediction with CU weights for the current coding block, wherein the weight indication indicates whether a first weight to be applied to a first prediction sample value for the current coding block in bi-prediction with CU weights is equal to a second weight to be applied to a second prediction sample value for the current coding block in bi-prediction with CU weights;

determine whether to bypass BDOF for the current coding block based at least in part on the weight indication of bi-prediction with CU weights for the current coding block, wherein, based on a condition that the first weight to be applied to the first prediction sample value for the current coding block in bi-prediction with CU weights is not equal to the second weight to be applied to the second prediction sample value for the current coding block in bi-prediction with CU weights, BDOF is determined to be bypassed for the current coding block; and

reconstruct the current coding block based on the determination of whether to bypass BDOF for the current coding block.

2. The apparatus of claim 1, wherein the processor is further configured to, based on a condition that the first weight to be applied to the first prediction sample value for the current coding block in bi-prediction with CU weights is equal to the second weight to be applied to the second prediction sample value for the current coding block in bi-prediction with CU weights, determine whether to perform BDOF for the current coding block based on at least another condition.

3. The apparatus of claim 1, wherein the weight indication indicates that the first weight to be applied to the first prediction sample value in bi-prediction with CU weights is not equal to the second weight to be

applied to the second prediction sample value for the current coding block in bi-prediction with CU weights, and the processor is further configured to:

determine the first weight to be applied to the first prediction sample value in bi-prediction with CU weights based on the weight indication;

obtain the second weight based on the first weight and a constraint; and

perform bi-prediction with CU weights on the current coding block based on the first weight and the second weight.

4. A method for video decoding, comprising:

determining that bi-directional optical flow (BDOF) is enabled;

determining that bi-prediction with coding unit (CU) weights is enabled for a current coding block;

identifying a weight indication of bi-prediction with CU weights for the current coding block, wherein the weight indication indicates whether a first weight to be applied to a first prediction sample value for the current coding block in bi-prediction with CU weights is equal to a second weight to be applied to a second prediction sample value for the current coding block in bi-prediction with CU weights;

determining whether to bypass BDOF for the current coding block based at least in part on the weight indication of bi-prediction with CU weights for the current coding block, wherein, based on a condition that the first weight to be applied to the first prediction sample value for the current coding block in bi-prediction with CU weights is not equal to the second weight to be applied to the second prediction sample value for the current coding block in bi-prediction with CU weights, BDOF is determined to be bypassed for the current coding block; and

reconstructing the current coding block based on the determination of whether to bypass BDOF for the current coding block.

5. The method of claim 4, further comprising, based on a condition that the first weight to be applied to the first prediction sample value for the current coding block in bi-prediction with CU weights is equal to the second weight to be applied to the second prediction sample value for the current coding block in bi-prediction with CU weights, determining whether to perform BDOF for the current coding block based on at least another condition.

6. The apparatus of claim 1 or the method of claim 4, wherein the weight indication of bi-prediction with CU weights for the current coding block comprises an index value corresponding to a predetermined weight.

7. The method of claim 4, wherein the weight indication indicates that the first weight to be applied to the first prediction sample value in bi-prediction with CU weights is not equal to the second weight to be applied to the second prediction sample value for the current coding block in bi-prediction with CU weights, the method further comprising:

determining the first weight to be applied to the first prediction sample value in bi-prediction with CU weights based on the weight indication;

obtaining the second weight based on the first weight and a constraint; and

performing bi-prediction with CU weights on the current coding block based on the first weight and the second weight.

8. The method of claim 4, wherein the weight indication indicates that the first weight to be applied to the first prediction sample value in bi-prediction with CU weights is equal to the second weight to be applied to the second prediction sample value for the current coding block in bi-prediction with CU weights, and the method further comprises determining to perform BDOF for the current coding block, wherein BDOF comprises refining a motion vector associated with the current coding block based at least in part on gradients associated with a location in the current coding block.

9. The apparatus of claim 1, wherein the processor is further configured to perform bi-prediction with CU weights without BDOF based on the determination to bypass BDOF, to reconstruct the current coding block.

10. An apparatus for video encoding, comprising:

a processor configured to:

determine that bi-directional optical flow (BDOF) is enabled;

determine that bi-prediction with coding unit (CU) weights is enabled for a current coding block;

generate a weight indication of bi-prediction with CU weights for the current coding block, wherein the weight indication indicates whether a first weight to be applied to a first prediction sample value for the current coding block in bi-prediction with CU weights is equal to a second weight to be applied to a second prediction sample value for the current coding block in bi-prediction with CU weights;

determine whether to bypass BDOF for the current coding block based at least in part on the weight indication of bi-prediction with CU weights for the current coding block, wherein, based on a condition that the first weight the first weight to be applied to the first prediction sample value for the current coding block in bi-prediction with CU weights is not equal to the second weight to be applied to the second prediction sample value for the current coding block in bi-prediction with CU weights, BDOF is determined to be bypassed for the current coding block;

generate residual based on the determination of whether to bypass BDOF; and

send the residual and the weight indication of bi-prediction with CU weights.

11. A method for video encoding, comprising:

determining that bi-directional optical flow (BDOF) is enabled;

determining that bi-prediction with coding unit (CU) weights is enabled for a current coding block;

generating a weight indication of bi-prediction with CU weights for the current coding block, wherein the weight indication indicates whether a first weight to be applied to a first prediction sample value for the current coding block in bi-prediction with CU weights is equal to a second weight to be applied to a second prediction sample value for the current coding block in bi-prediction with CU weights;

determining whether to bypass BDOF for the current coding block based at least in part on the weight indication of bi-prediction with CU weights for the current coding block, wherein, based on a condition that the first weight to be applied to the first prediction sample value for the current coding block in bi-prediction with CU weights is not equal to the second weight to be applied to the second prediction sample value for the current coding block in bi-prediction with CU weights, BDOF is determined to be bypassed for the current coding block;

generating residual based on the determination of whether to bypass BDOF; and

sending the residual and the weight indication of bi-prediction with CU weights.

12. The apparatus of claim 10, wherein the processor is further configured to, based on a condition that the first weight to be applied to the first prediction sample value for the current coding block in bi-prediction with CU weights is equal to the second weight to be applied to the second prediction sample value for the current coding block in bi-prediction with CU weights, determine whether to perform BDOF for the current coding block based on at least another condition.

13. The apparatus of claim 10, wherein the weight indication indicates that the first weight to be applied to the first prediction sample value in bi-prediction with CU weights is not equal to the second weight to be applied to the second prediction sample value for the current coding block in bi-prediction with CU weights, and the processor is further configured to:

determine the first weight to be applied to the first prediction sample value in bi-prediction with CU weights based on the weight indication;

obtain the second weight based on the first weight and a constraint; and

perform bi-prediction with CU weights on the current coding block based on the first weight and the second weight.

14. The method of claim 11, further comprising, based on a condition that the first weight to be applied to the first prediction sample value for the current coding block in bi-prediction with CU weights is equal to the second weight to be applied to the second prediction sample value for the current coding block in bi-prediction with CU weights, determining whether to perform BDOF for the current coding block based on at least another condition.

15. A computer-readable medium including instructions for causing one or more processors to perform the method of any one of claims 4-9, 11 and 14.