CLAIMS

What is Claimed:

1. An apparatus for video processing, 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 CU;

identify a weight indication of bi-prediction with CU weights for the current CU, wherein the weight indication indicates weights to be used for the current CU in bi-prediction with CU weights;

determine whether to bypass BDOF for the current CU based at least in part on the weight indication of bi-prediction with CU weights for the current CU, wherein, on a condition that the weight indication indicates that unequal weights are to be used for the current CU in bi-prediction with CU weights, determine to bypass BDOF for the current CU; and

reconstruct the current CU based on the determination of whether to bypass BDOF.

2. The apparatus of claim 1, wherein the processor is further configured to, on a condition that the weight indication indicates that equal weights are to be used for the current CU in bi-prediction with CU weights, determine whether to perform BDOF for the current CU based on at least another condition.

3. The apparatus of claim 1, wherein the weight indication indicates that unequal weights are to be used for the current CU in bi-prediction with CU weights, and the processor is further configured to:

determine a first prediction CU weight based on the weight indication;

derive a second prediction CU weight based on the first prediction CU weight and a constraint; and

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

4. A method for video processing, comprising:

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

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

identifying a weight indication of bi-prediction with CU weights for the current CU, wherein the weight indication indicates weights to be used for the current CU in bi-prediction with CU weights;

determining whether to bypass BDOF for the current CU based at least in part on the weight indication of bi-prediction with CU weights for the current CU, wherein, on a condition that the weight indication indicates that unequal weights are to be used for the current CU in bi-prediction with CU weights, the method comprises determining to bypass BDOF for the current CU; and

reconstructing the current CU based on the determination of whether to bypass BDOF.

5. The method of claim 4, further comprising, on a condition that the weight indication indicates that equal weights are to be used for the current CU in bi-prediction with CU weights, determining whether to perform BDOF for the current CU 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 CU comprises an index value corresponding to a predetermined weight.

7. The method of claim 4, wherein the weight indication indicates that unequal weights are to be used for the current CU in bi-prediction with CU weights, the method further comprising:

determining a first prediction CU weight based on the weight indication;

deriving a second prediction CU weight based on the first prediction CU weight and a constraint; and

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

8. The apparatus of claim 1 or the method of claim 4, wherein BDOF comprises refining a motion vector associated with the current CU based at least in part on gradients associated with a location in the current CU.

9. The apparatus of claim 1 or the method of claim 4, wherein reconstructing the current CU further comprises performing bi-prediction with CU weights without BDOF based on the determination to bypass BDOF.

10. An apparatus for video processing, 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 CU;

generate a weight indication of bi-prediction with CU weights for the current CU, wherein the weight indication indicates weights to be used for the current CU in bi-prediction with CU weights;

determine whether to bypass BDOF for the current CU based at least in part on the weight indication of bi-prediction with CU weights for the current CU, wherein, on a condition that the weight indication indicates that unequal weights are to be used for the current CU in bi-prediction with CU weights, determine to bypass BDOF for the current CU;

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 processing, comprising:

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

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

generating a weight indication of bi-prediction with CU weights for the current CU, wherein the weight indication indicates weights to be used for the current CU in bi-prediction with CU weights;

determining whether to bypass BDOF for the current CU based at least in part on the weight indication of bi-prediction with CU weights for the current CU, wherein, on a condition that the weight indication indicates that unequal weights are to be used for the current CU in bi-prediction with CU weights, the method comprises determining to bypass BDOF for the current CU;

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, on a condition that the weight indication indicates that equal weights are to be used for the current CU in bi-prediction with CU weights, determine whether to perform BDOF for the current CU based on at least another condition.

13. The apparatus of claim 10, wherein the weight indication indicates that unequal weights are to be used for the current CU in bi-prediction with CU weights, and the processor is further configured to:

determine a first prediction CU weight based on the weight indication;

derive a second prediction CU weight based on the first prediction CU weight and a constraint; and

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

14. The method of claim 11, further comprising, on a condition that the weight indication indicates that equal weights are to be used for the current CU in bi-prediction with CU weights, determining whether to perform BDOF for the current CU 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.