

Claims

1. A method of encoding a multi-view image, the method comprising:
determining whether each of pictures included in multi-view image sequences is a reference picture referred to by others of the pictures included in the multi-view image sequences for inter-view prediction to generate a determination result; and
encoding the pictures using at least one of inter-view prediction and temporal prediction based on the determination result.
2. The method of claim 1, wherein the encoding the pictures comprises encoding a parameter for each of the pictures, which indicates whether each of the pictures is the reference picture.
3. The method of claim 2, wherein the parameter is a network abstraction layer (NAL) unit header for each of the pictures.
4. The method of claim 1, wherein the encoding the pictures comprises encoding information about the reference picture referred to by the others of the pictures for at least one of inter-view prediction and temporal prediction based on the determination result.
5. The method of claim 1, wherein the determination comprises making the determination based on a temporal level of each of the pictures.
6. An apparatus for encoding a multi-view image, the apparatus comprising:
a determination unit that determines whether each of pictures included in multi-view image sequences is a reference picture referred to by others of the pictures included in the multi-view image sequences for inter-view prediction to generate a determination result; and
an encoding unit that encodes the pictures using at least one of inter-view prediction and temporal prediction based on a determination result.
7. The apparatus of claim 6, wherein the encoding unit encodes a parameter for each of the pictures, which indicates whether each of the pictures is the reference picture.
8. The apparatus of claim 7, wherein the parameter is a network abstraction layer (NAL) unit header for each of the pictures.
9. The apparatus of claim 6, wherein the encoding unit encodes information about the reference picture referred to by the others of the pictures for at least one of inter-view prediction and temporal prediction based on the determination result.
10. The apparatus of claim 6, wherein the determination unit makes the determination based on a temporal level of each of the pictures.
11. A method of decoding a multi-view image, the method comprising:

receiving a bitstream comprising information indicating whether each of pictures included in multi-view image sequences is a reference picture referred to by others of the pictures included in the multi-view image sequences for inter-view prediction and data about the multi-view image sequences;
extracting the information and the data about the multi-view image sequences from the received bitstream; and
decoding the data about the multi-view image sequences based on the extracted information.

12. The method of claim 11, wherein the information is included in a parameter for each of the pictures.

13. The method of claim 12, wherein the parameter is a network abstraction layer (NAL) unit header for each of the pictures.

14. The method of claim 11, wherein whether each of the pictures included in the multi-view image sequences is the reference picture is determined based on a temporal level of each of the pictures.

15. An apparatus for decoding a multi-view image, the apparatus comprising:
an extraction unit that receives a bitstream comprising information indicating whether each of pictures included in multi-view image sequences is a reference picture referred to by others of the pictures included in the multi-view image sequences for inter-view prediction and data about the multi-view image sequences, and extracts the information and the data about the multi-view image sequences from the received bitstream; and
a decoding unit that decodes the data about the multi-view image sequences based on the extracted information.

16. The apparatus of claim 15, wherein the information is included in a parameter for each of the pictures.

17. The apparatus of claim 16, wherein the parameter is a network abstraction layer (NAL) unit header for each of the pictures.

18. The apparatus of claim 15, wherein whether each of the pictures included in the multi-view image sequences is the reference picture is determined based on a temporal level of each of the pictures.

19. A method of encoding a multi-view image, the method comprising:
selecting pictures to be encoded using inter-view prediction and temporal prediction from multi-view image sequences based on temporal levels; and
encoding the selected pictures using inter-view prediction and temporal prediction, and encoding remaining pictures included in the multi-view image sequences using one of inter-view prediction and temporal prediction.

20. The method of claim 19, wherein the selecting pictures comprises selecting

non-anchor pictures in temporal levels that are less than a given value from among all pictures included in the multi-view image sequences.

21. The method of claim 19, wherein the selecting pictures comprises selecting the pictures to be encoded using inter-view prediction and temporal prediction for each view of the multi-view image sequences based on the temporal levels.

22. The method of claim 19, wherein the encoding the selected pictures comprises encoding information about the selected pictures.

23. The method of claim 22, wherein the encoding the selected pictures comprises encoding a sequence parameter or a supplemental enhancement information (SEI) message comprising the information.

24. An apparatus for encoding a multi-view image, the apparatus comprising:
a selection unit that selects pictures to be encoded using inter-view prediction and temporal prediction from multi-view image sequences based on temporal levels; and
an encoding unit that encodes the selected pictures using inter-view prediction and temporal prediction, and encodes remaining pictures included in the multi-view image sequences using one of inter-view prediction and temporal prediction.

25. The apparatus of claim 24, wherein the selection unit selects non-anchor pictures in temporal levels that are less than a given value from among all pictures included in the multi-view image sequences.

26. The apparatus of claim 24, wherein the selection unit selects the pictures to be encoded using inter-view prediction and temporal prediction for each view of the multi-view image sequences based on the temporal levels.

27. The apparatus of claim 24, wherein the encoding unit encodes information about the selected pictures.

28. The apparatus of claim 27, wherein the encoding unit encodes a sequence parameter or a supplemental enhancement information (SEI) message comprising the information.

29. A method of decoding a multi-view image, the method comprising:
receiving a bitstream comprising information about pictures encoded using inter-view prediction and temporal prediction from multi-view image sequences, and data about the multi-view image sequences;
extracting the information and the data about the multi-view image sequences from the received bitstream; and
decoding the data about the multi-view image sequences based on the extracted information.

30. The method of claim 29, wherein the encoded pictures have been selected

based on temporal levels.

31. The method of claim 29, wherein the information is included in a sequence parameter or a supplemental enhancement information (SEI) message.

32. An apparatus for decoding a multi-view image, the apparatus comprising:
an extraction unit that receives a bitstream comprising information about pictures encoded using inter-view prediction and temporal prediction from multi-view image sequences and data about the multi-view image sequences, and extracts the information and the data about the multi-view image sequences from the received bitstream; and

a decoding unit that decodes the data about the multi-view image sequences based on the extracted information.

33. The apparatus of claim 32, wherein the encoded pictures have been selected based on temporal levels.

34. The apparatus of claim 32, wherein the information is included in a sequence parameter or a supplemental enhancement information (SEI) message.

35. A computer-readable recording medium having recorded thereon a program for executing the method of claim 1.

36. A computer-readable recording medium having recorded thereon a program for executing the method of claim 11.

37. A computer-readable recording medium having recorded thereon a program for executing the method of claim 19.

38. A computer-readable recording medium having recorded thereon a program for executing the method of claim 29.

Claims

1. A method of decoding a multi-view image, the method comprising:

receiving a bitstream comprising information indicating whether a picture in one view image sequence included in multi-view image sequences is a reference picture referred to by others in another view image included in the multi-view image sequences for inter-view prediction and data about the multi-view image sequences;

extracting the information and the data about the multi-view image sequences from the received bitstream; and decoding the data about the multi-view image sequences based on the extracted information,

wherein the information is included in a network abstraction layer (NAL) unit header, and

wherein a picture which is a reference picture referred to by others in another view image sequence for inter-view prediction is included in a reference picture list and a picture which is not a reference picture referred to by others in another view image sequence for inter-view prediction is not included in the reference picture list.