Claims:

1. A method for coding information of a point cloud, the method performed by at least one processor and comprising:

obtaining the point cloud including a set of points in a three-dimensional space;

determining whether a current node in the set of points is isolated; and

based on a determination that the current node is isolated, coding the current node in isolation mode, in which, a duplicate number or a geometry position of the current node are coded, and based on a determination that the current node is not isolated, coding the current node in non-isolation mode, in which:

the duplicate number is coded for the current node based on a determination that the current node is a leaf node, or

occupancy information is coded based on a determination that the current node is not a leaf node.

2. The method of claim 1, further comprising, in the isolation mode, determining whether the current node is a duplicate node.

3. The method of claim 2, further comprising coding the duplicate number and coding the geometry position of the current node based on a determination that the current node is the duplicate node.

4. The method of claim 3, wherein the coding the geometry position of the current node is performed after the duplicate number is coded.

5. The method of claim 2, further comprising coding a geometry position of the isolated current node without coding a duplicate number based on a determination that the current node is not a duplicate node.

6. The method of claim 1, further comprising, in the non-isolation mode, determining whether the current node is a leaf node.

7. The method of claim 6, further comprising coding a duplicate number and terminating tree partition based on a determination that the current node is a leaf node.

8. The method of claim 6, further comprising coding occupancy information and inserting all occupied child nodes in a first-in-first-out list based on a determination that the current node is not a leaf node.

9. An apparatus for coding information of a point cloud, the apparatus comprising:

at least one memory storing computer program code; and

at least one processor configured to access the computer program code and operate as instructed by the computer program code, the computer program code including:

obtaining code configured to cause the at least one processor to obtain the point cloud including a set of points in a three-dimensional space;

isolation determining code configured to cause the at least one processor to determine whether a current node in the set of points is isolated; and

encoding code configured to cause the at least one processor to, based on a determination that the current node is isolated, code the current node in isolation mode, in which, a duplicate number or a geometry position of the current node are coded, and based on a determination that the current node is not isolated, code the current node in non-isolation mode, in which:

the duplicate number is coded for the current node based on a determination that the current node is a leaf node, or

occupancy information is coded based on a determination that the current node is not a leaf node.

10. The apparatus of claim 9, wherein, in the isolation mode, the computer program code further includes duplicate determining code configured to cause the at least one processor to determine whether the current node is a duplicate node.

11. The apparatus of claim 10, wherein the duplicate determining code is further configured to cause the at least one processor to code the duplicate number and code the geometry position of the current node based on a determination that the current node is a duplicate node.

12. The apparatus of claim 11, wherein the coding the geometry position of the current node is performed after the duplicate number is coded.

13. The apparatus of claim 10, wherein the duplicate determining code is further configured to cause the at least one processor to code the geometry position of the isolated current node without coding the duplicate number based on a determination that the current node is not the duplicate node.

14. The apparatus of claim 9, wherein, in the non-isolation mode, the computer program code further includes leaf determining code configured to cause the at least one processor to determine whether the current node is a leaf node.

15. The apparatus of claim 14, wherein the leaf determining code is further configured to cause the at least one processor to code a duplicate number and terminating tree partition based on a determination that the current node is a leaf node.

16. The apparatus of claim 14, wherein the leaf determining code is further configured to cause the at least one processor to perform coding of occupancy information and inserting all occupied child nodes in a first-in-first-out list based on a determination that the current node is not a leaf node.

17. A non-transitory computer readable medium having stored thereon computer code that when executed by at least one processor can cause the processor to code information of a point cloud by:

obtaining the point cloud including a set of points in a three-dimensional space;

determining whether a current node in the set of points is isolated; and

based on a determination that the current node is isolated, coding the current node in isolation mode, in which, a duplicate number or a geometry position of the current node are coded, and coding the current node in non-isolation mode, based on a determination that the current node is not isolated, coding the current node in non-isolation mode, in which:

the duplicate number is coded for the current node based on a determination that the current node is a leaf node, or

occupancy information is coded based on a determination that the current node is not a leaf node.

18. The non-transitory computer readable medium of claim 17, further comprising, in the isolation mode, determining whether the current node is a duplicate node.

19. The non-transitory computer readable medium of claim 18, further comprising:

coding the duplicate number and coding the geometry position of the current node based on a determination that the current node is the duplicate node; and

coding the geometry position of the isolated current node without coding the duplicate number based on a determination that the current node is not the duplicate node.

20. The non-transitory computer readable medium of claim 18, wherein the coding the geometry position of the current node is performed after the duplicate number is coded.