CLAIMS

1. A method of decoding point cloud data, executable by a processor, comprising:

receiving data corresponding to a point cloud;

reducing a number of contexts associated with the received data based on occupancy data corresponding to one or more parent nodes and one or more child nodes within the received data;

decoding the data corresponding to the point cloud based on the reduced number of contexts;

wherein for parent nodes that share a same face with child nodes, a parent-level context index is calculated by taking all possible combinations, and for parent nodes that share an edge with child nodes, a parent-level context index is calculated by just counting how many of the parent nodes are occupied.

2. The method of claim 1, further comprising caching the occupancy data based on a hash table.

3. The method of claim 1, further comprising signaling a context reduction level in a sequence parameter set, a geometry parameter set, or a slice data header.

4. The method of claim 1, wherein the number of contexts is reduced based on one or more child nodes having a shortest distance from a current node.

5. The method of claim 1, wherein the number of contexts is reduced based on considering only a subset of child nodes from among the one or more child nodes.

6. The method of claim 1, wherein the number of contexts is reduced based on not differentiating between the one or more child nodes.

7. The method of claim 1, wherein the number of contexts is reduced based on discarding occupancy data associated with the one or more parent nodes.

8. A computer system for decoding point cloud data, the computer system comprising:

one or more computer-readable non-transitory storage media configured to store computer program code; and

one or more computer processors configured to access said computer program code and operate as instructed by said computer program code, said computer program code including:

receiving code configured to cause the one or more computer processors to receive data corresponding to a point cloud;

reducing code configured to cause the one or more computer processors to reduce a number of contexts associated with the received data based on occupancy data corresponding to one or more parent nodes and one or more child nodes within the received data;

decoding code configured to cause the one or more computer processors to decode the data corresponding to the point cloud based on the reduced number of contexts;

wherein for parent nodes that share a same face with child nodes, a parent-level context index is calculated by taking all possible combinations, and for parent nodes that share an edge with child nodes, a parent-level context index is calculated by just counting how many of the parent nodes are occupied.

9. The computer system of claim 8, further comprising caching code configured to cause the one or more computer processors to cache the occupancy data based on a hash table.

10. The computer system of claim 8, further comprising signaling code configured to cause the one or more computer processors to signal a context reduction level in a sequence parameter set, a geometry parameter set, or a slice data header.

11. The computer system of claim 8, wherein the number of contexts is reduced based on one or more child nodes having a shortest distance from a current node.

12. The computer system of claim 8, wherein the number of contexts is reduced based on considering only a subset of child nodes from among the one or more child nodes.

13. The computer system of claim 8, wherein the number of contexts is reduced based on not differentiating between the one or more child nodes.

14. The computer system of claim 8, wherein the number of contexts is reduced based on discarding occupancy data associated with the one or more parent nodes.

15. A non-transitory computer readable medium having stored thereon a computer program for decoding point cloud data, the computer program configured to cause one or more computer processors to:

receive data corresponding to a point cloud;

reduce a number of contexts associated with the received data based on occupancy data corresponding to one or more parent nodes and one or more child nodes within the received data;

decode the data corresponding to the point cloud based on the reduced number of contexts;

wherein for parent nodes that share a same face with child nodes, a parent-level context index is calculated by taking all possible combinations, and for parent nodes that share an edge with child nodes, a parent-level context index is calculated by just counting how many of the parent nodes are occupied.

16. The computer readable medium of claim 15, wherein the computer program is further configured to cause one or more computer processors to cache the occupancy data based on a hash table.

17. The computer readable medium of claim 15, wherein the computer program is further configured to cause one or more computer processors to signal a context reduction level in a sequence parameter set, a geometry parameter set, or a slice data header.

18. The computer readable medium of claim 15, wherein the number of contexts is reduced based on one or more child nodes having a shortest distance from a current node.

19. The computer readable medium of claim 15, wherein the number of contexts is reduced based on considering only a subset of child nodes from among the one or more child nodes.

20. The computer readable medium of claim 15, wherein the number of contexts is reduced based on not differentiating between the one or more child nodes.