CLAIMS:

1. A method for point cloud coding, comprising:

determining, by a processor, one or more original points in a point cloud that are associated with a reconstructed position, positions of the one or more original points being reconstructed to the reconstructed position, according to a geometry quantization;

determining, by the processor, an attribute value for the reconstructed position based on attribute information of the one or more original points; and

encoding, by the processor, texture of the point cloud with the reconstructed position having the determined attribute value;

wherein the method further comprises:

storing, a data structure that associates the one or more original points with the reconstructed position according to the geometry quantization;

wherein determining the one or more original points in the point cloud that are associated with the reconstructed position comprises:

accessing the data structure based on the reconstructed position to retrieve the one or more original points associated with the reconstructed position.

2. The method of claim 1, further comprising:

performing, by the processor, an octree partition that partitions a space of the point cloud into voxels; and

associating, by the processor, the one or more original points that are positioned in a voxel, of the voxels, with the reconstructed position for representing the voxel, wherein the voxel is a unit size cubical box that includes the one or more original points in the point cloud, and the one or more original points are quantized to a center position of the voxel.

3. The method of claim 2, wherein for each reconstructed position being a center point of one of the voxels, accessing the data structure based on the reconstructed position to retrieve the one or more original points associated with the reconstructed position comprises:

determining, based on the data structure, the original points which are of the one of the voxels and are merged to the center position of the one of the voxels.

4. The method of claim 2, wherein:

the data structure is a lookup table or a list.

5. The method of claim 1, further comprising:

calculating, by the processor, an average of attribute values of multiple original points as the determined attribute value for the reconstructed position in response to the multiple original points being associated with the reconstructed position.

6. The method of claim 1, further comprising:

calculating, by the processor, a weighted average of the attribute values of the multiple original points as the determined attribute value for the reconstructed position.

7. The method of claim 6, further comprising:

weighting, by the processor, an attribute value of an original point in the multiple original points based on an inverse of a distance between the original point and the reconstructed position.

8. The method of claim 1, further comprising:

assigning, by the processor, a specific attribute value of a nearest point in multiple original points to be the determined attribute value for the reconstructed position in response to the multiple original points being associated with the reconstructed position.

9. The method of claim 8, further comprising:

selecting, by the processor, a median attribute value among attribute values for nearest points in response to the nearest points in the multiple original points having a same shortest distance to the reconstructed position.

10. The method of claim 8, further comprising:

calculating, by the processor, a mean attribute value of attribute values for nearest points in response to the nearest points in the multiple original points having a same shortest distance to the reconstructed position.

11. An apparatus for point cloud coding, comprising:

processing circuitry configured to perform the method according to any one of claims 1 to 10.

12. A non-transitory computer-readable medium, storing a program, wherein:

the program when executed by one or more processors is configured to perform the method according to any one of claims 1 to 10.