

Claims

1. A method for encoding a 3-dimensional color Look-Up Table defined as a lattice of vertices using an octree, the 3-dimensional color Look-Up Table storing at least one value for each vertex representing a set of input color values, the method comprising:
 - encoding a split flag for a current octant of said octree indicating whether at least one of its immediate child octants is recursively encoded;
 - predicting at least one value for a vertex in the current octant from a reconstruction color value of at least one neighboring vertex to obtain a prediction;
 - determining a residue computed between the at least one value for the vertex and the prediction;
 - quantizing the residue to obtain quantized residue;
 - entropy coding the quantized residue; and
 - encoding the immediate child octants of said current octant if the split flag for said current octant is true.
2. The method according to claim 1, further comprising encoding a binary flag for said vertex indicating whether or not at least one residue is encoded for said vertex.
3. The method according to claim 1, wherein the at least one value for a vertex and the reconstruction of value(s) for the neighboring vertex are color values.
4. The method according to claim 3, wherein said color values are parameters for a color transform.
5. The method according to claim 1, wherein said at least one neighboring vertex used for obtaining said reconstruction of value(s) for said neighboring vertex belongs to a parent octant of the current octant.

6. A method for decoding a 3-dimensional color Look-Up Table defined as a lattice of vertices using an octree, the 3-dimensional color Look-Up Table storing at least one value for each vertex representing a set of input color values, the method comprising:
 - decoding a split flag for a current octant of said octree indicating whether at least one of its immediate child octants should be recursively decoded;
 - predicting at least one value for a vertex in the current octant from another value obtained from a reconstruction of value for at least one neighboring vertex to obtain a prediction;
 - entropy decoding an entropy-coded quantized residue of the at least one value for the vertex in the current octant to obtain a quantized residue;
 - inverse quantizing the quantized residue of the at least one value for the vertex in the current octant to obtain a residue;
 - reconstructing the at least one value for the vertex from the prediction and the residue; and
 - decoding the immediate child octants of said current octant if the split flag for said current octant is true.
7. The method according to claim 6, further comprising decoding a binary flag for said vertex indicating whether or not at least one residue should be decoded for said vertex.
8. The method according to claim 6, the at least one value for a vertex, the reconstruction of value(s) for the neighboring vertex are color values.
9. The method according to claim 8, wherein said color values are parameters for a color transform.
10. The method according to claim 6, wherein said at least one neighboring vertex used for obtaining said reconstruction of value(s) for said neighboring vertex belongs to a parent octant of the current octant.

Claims

1. A method for encoding a 3-dimensional color Look-Up Table defined as a lattice of vertices using an octree, the 3-dimensional color Look-Up Table storing at least one value for each vertex representing a set of input color values, the method comprising:

encoding a split flag for a current octant of said octree indicating whether at least one of its immediate child octants is recursively encoded;

predicting at least one value for a vertex in the current octant from a reconstruction of value(s) of at least one neighboring vertex to obtain a prediction;

determining a residue computed between the at least one value for the vertex and the prediction;

quantizing the residue to obtain quantized residue;

entropy coding the quantized residue; and

encoding the immediate child octants of said current octant if the split flag for said current octant is true.

2. The method according to claim 1, further comprising encoding a binary flag for said vertex indicating whether or not at least one residue is encoded for said vertex.

3. The method according to claim 1, wherein the at least one value for a vertex and the reconstruction of value(s) for the neighboring vertex are color values.

4. The method according to claim 3, wherein said color values are parameters for a color transform.

5. The method according to claim 1, wherein said at least one neighboring vertex used for obtaining said reconstruction of value(s) for said neighboring vertex belongs to a parent octant of the current octant.

- 5 6. A method for decoding a 3-dimensional color Look-Up Table defined as a lattice of vertices using an octree, the 3-dimensional color Look-Up Table storing at least one value for each vertex representing a set of input color values, the method comprising:

10 decoding a split flag for a current octant of said octree indicating whether at least one of its immediate child octants should be recursively decoded;

predicting at least one value for a vertex in the current octant from another value obtained from a reconstruction of value(s) for at least one neighboring vertex to obtain a prediction;

15 entropy decoding an entropy-coded quantized residue of the at least one value for the vertex in the current octant to obtain a quantized residue;

inverse quantizing the quantized residue of the at least one value for the vertex in the current octant to obtain a residue;

reconstructing the at least one value for the vertex from the prediction and the residue; and

20 decoding the immediate child octants of said current octant if the split flag for said current octant is true.

7. The method according to claim 6, further comprising decoding a binary flag for said vertex indicating whether or not at least one residue should be decoded for
25 said vertex.

8. The method according to claim 6, the at least one value for a vertex, the reconstruction of value(s) for the neighboring vertex are color values.

- 30 9. The method according to claim 8, wherein said color values are parameters for a color transform.

10. The method according to claim 6, wherein said at least one neighboring vertex used for obtaining said reconstruction of value(s) for said neighboring vertex belongs to a parent octant of the current octant.