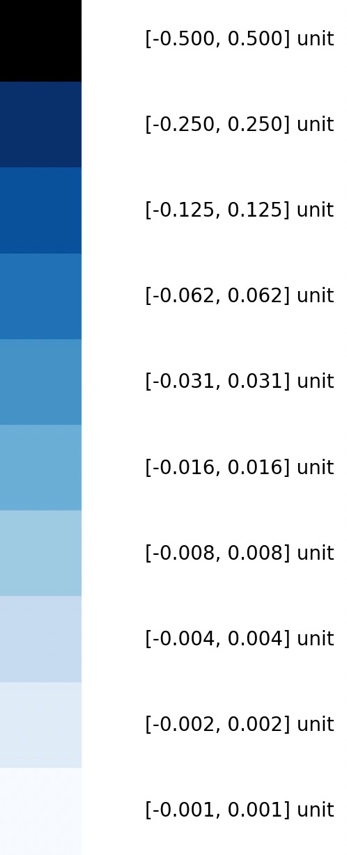
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Color Map



House K-D Tree Visualizations with the above Gradient Color Map

A blue and white network

Description automatically generatedA blue and white dotted design

Description automatically generated

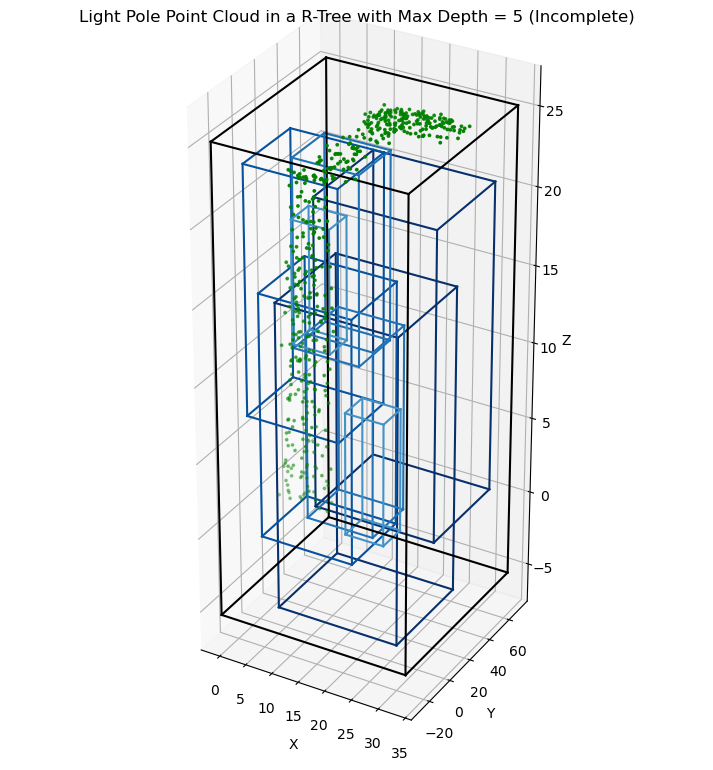
Tools for Building R-Tree Visualizations

Matplotlib 3D

<https://www.geeksforgeeks.org/three-dimensional-plotting-in-python-using-matplotlib/>

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First try of building a R-Tree visualization



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1. New Color Map Labels (Octree)

depth = [0, 1, 2, 3, 4, 5]

*Same depth*

*Do the spatial first, and set the remaining point number when randomly reduce*

*Original: ~20,000*

Light pole:[**4096**, 64, 8, 2, 1]

House (Spatial): [**4096**, 64, 8, 2, 1]

House (Random): [**4096**, 64, 8, 2, 1]

Tree (Spatial): [**4096**, 64, 8, 2, 1]

Tree (Random): [**4096**, 64, 8, 2, 1]

And for all Cases

2. Size Map?

A network of blue dots and dots

Description automatically generated

4. R-Tree Visualization still progressing…

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Tree

Random (4096 points)

Spatial (4108 points, subsampled 12 points manually; subsampled within 1.05-unit distance)

Light Pole

Random (4096 points)

Spatial (4107 points, subsampled 11 points manually; subsampled within 0.25-unit distance)

House:

A white rectangular object with small dots

Description automatically generatedRandom (4096 points)

A white dots on a black background

Description automatically generatedSpatial (4096 points, subsampled within 1.41-unit distance using CloudCompare, and subsampled 1 point manually)