

Discrete Space, Voxelization and Distance Fields

Jian Huang, CS 594, Spring 2002

Papers

- Huang et al, 'Accurate Voxelization of Polygonal Meshes', IEEE Symposium on Volume Visualization, 1998
- Huang et al, 'CDFR', IEEE Conference on Visualization, 2001

Discrete Space

- A 3D discrete space Z^3 is a set of integer grid points in a 3D
- Euclidean space denoted by S . A 3D grid point is a zero dimensional object defined by its Cartesian coordinate (x,y,z) .
- The *Voronoi neighborhood of grid point p* is the set of all points in the Euclidean space that are closer to p than to any other grid point.
- The Voronoi neighborhood of a 3D grid point is a unit cube around it, known also as a *voxel*.