

Navigation meshes are a widely used method for representing the world geometry in a format that can be used by pathfinding algorithms.

Frequently used navigation mesh generation algorithms first discretize the input geometry into a grid of voxels and then reconstruct the mesh out of them. This benefits the simplicity and performance of the algorithm, but comes with drawbacks. If the voxels are too large, the navigation mesh is not precise enough and may even have some pathways missing. If the voxels are too small, creation of the mesh takes too long.

In this thesis we propose and implement an algorithm that creates a navigation mesh directly from the input geometry without using an intermediate voxel representation. This allows us to preserve original detail where required and results in a more precise navigation mesh.