Visual Guided Shape Optimization Using Differentiable Renderer

Hsien-Yu Meng
Motivation: LOD rendering for game engines

High Resolution Mesh

Low-Resolution Mesh, No texture
Experiment: Deform a sphere using diff renderer
Experiment: Deform a sphere
Experiment: Deform a sphere
Experiment: Deform a sphere
Challenging Task

• typologies of the two meshes are not homogeneous.

• traditional algorithms on mesh simplification based on quadratic error metric. (e.g. half edge collapse, vertex cluster)

• self-intersection and other quadratic constraints