

## **Abstract**

Modern 3D scanners produce detailed and vast scenes consisting of huge number of triangles. This thesis is dedicated to simplification of such triangular meshes with attributes. The problem of reducing the number of triangles is studied as an optimization problem. Couple algorithms and approaches are introduced as solution of inner and outer optimization process. Finally, three simplification algorithms are introduced. The goal is not only to preserve the geometry of the mesh, but also its attributes such as textures and normals. Results are compared with existing solutions.

The result of thesis is a complete software with graphical user interface. This software is able to load and display mesh, decimate it with user defined algorithm and parameters. Eventually, it's possible to export the scene.