Bilkent University

CS 478 COMPUTATIONAL GEOMETRY PROJECT PROPOSAL

Abdullah Can Alpay (21702686) and Ümit Yiğit Başaran (21704103)

Implementation of Two Delaunay Triangulation Algorithms on 2D Surface and the Performance Comparison

This project will create an interface to show the graphical output and the performance differences for two Delaunay triangulation algorithms on a 2D surface, randomized incremental algorithm, and plane sweep algorithm.

The user will provide the number of points to the algorithms in the interface, and then the interface will randomly generate the points. The user will see the progress throughout the process of a selected algorithm, with an entered epoch number to compute before showing the progress step. The user will be able to move, zoom in, zoom out by simply using the mouse and use keyboard keys to rotate and translate while visualizing the Delaunay triangulation. The interface will also show the algorithm's performance for different test cases.

UI connection will use JavaScript/HTML elements, and WebGL will handle 2D Delaunay triangulation visualization.