CS 564 Project Proposal

Implementation of Parallel Delaunay Triangulation

The project will cover a parallelized 2D Delaunay Triangulation implementation, and some experiments to observe the computational performance under various constraints.

Ideas from an existing divide-and-conquer approach, which was brought by Guy Blelloch, Gary L. Miller, and Dafna Talmor, will be used for the implementation. This approach takes advantage of parallelized 2D convex hull algorithms, and its main steps for each iteration are as follows:

- Finding a median line to divide the point set,
- Using 2D convex hull algorithm to determine the new border, and
- Merging the new border with the old one.

Although it may contain some additions, the experiment data are expected to be similar to the ones that were used for the testing of previously mentioned approach.

The project will be implemented by Ömer Yavuz Öztürk.