CS 564 Project Proposal:

Higher Level Voronoi Diagrams for K-Nearest Neighbor Queries

In our project we plan to use Higher Order Voronoi Diagram to process K-Nearest Neighbour queries.

The Voronoi diagram is a decomposition of space S into convex polygonal cells. Each point x in S is associated to a cell that contains all the points in the plane that are closer to x than any other point in S. This cell complex is the nearest neighbor decomposition. The Higher Order Voronoi Diagram extends the concept of the Voronoi diagram by defining cells using the n nearest neighbors.

This approach reduces the search space when processing queries. Therefore, we expect better performance in query time reckoning without the problems we may face.

Group Members:

Hüseyin Eren Çalık – 21402338 (Graduate student)

Musa Farshkar Azari – 21901219 (Graduate student)