CS 478 Project Proposal

**Project Name:** Implementing Three Voronoi Diagram Computation Algorithms and Comparing Their Performance

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**Project Description**

The program will generate a set of random points in two dimensions using various distributions as input and will calculate as well as visualize the 2D Voronoi Diagram as a graphical output. The program will allow the users to specify parameters such as number of points. It will also include features such as zooming in/out and translation while displaying the 2D Voronoi Diagram.

The following Voronoi Diagram computation algorithms will be used:

- Randomized Incremental Algorithm
- Fortune’s Algorithm
- The Flipping Algorithm

The program will be tested with a number of arbitrary point sets. Performance results will be noted and performance of the algorithms will be compared for different numbers of points.

For this project we decided to use Python because of our familiarity with working with Python, abundance of libraries related to our topic which we can use and well described documentation which serve our purpose.