CS531 Computational Geometry

Problem Set 5
Voronoi Diagrams

Handed out: Friday, February 24
Due: Monday, March 6

Problem 1. Voronoi Diagram Complexity

Prove that the vertex v_∞ in the proof of Theorem 7.3 is incident on three or more edges.

Problem 2. Circle Event Detection

Prove that breakpoints a/b and b/c converge to the center o of the circle through $\{a, b, c\}$ iff $\mathrm{LT}(a, b, c) < 0$.

Problem 3. Site/Breakpoint Order

Prove the correctness of the x-order test for a site with respect to a breakpoint.

Problem 4. Event Order

Show how to compute the event order without using square roots.