CS 516 -6
Computational Geometry & Graph Drawing
(Spring 2013)

Reading

MountNotes Chapters 7,8
Chapters 9,10, 6
Seidel, R., "Small-dimensional linear programming and convex hulls made easy", Discrete and Computational Geometry 6: 423-434 (1991)

Last time…

- lower bounds for convex hulls (and other problems)
  - Algebraic decision trees…region counting
  - Milnor and Ben-Or theorems
    - Applications: element distinctness, CH…
- Loose ends
  - Half-space intersection---certification
  - K-S convex hull bridge finding

Last time (cont.)…

- Low dimensional linear programming
  - Warmup: sketch of candidate elimination scheme for “marriage-before-conquest” bridge endpoints
  - Sketch of 2-d linear programming by constraint elimination (Megiddo); extensions to higher dimensions

Today…

- More low dimensional linear programming
  - A randomized incremental algorithm
  - Issues in higher dimensions
  - “Backward” analysis of expected cost
- Smallest enclosing sphere (1-centre) problem
  - Welzl’s algorithm

Today…

- More low dimensional linear programming
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- Smallest enclosing sphere (1-centre) problem
  - Welzl’s algorithm
- Point location in planar maps…