

CS 420: Advanced Algorithm Design and Analysis

Spring 2015 – Lecture 24

Department of Computer Science
University of British Columbia



April 02, 2015

Announcements

Assignments...

- ▶ Asst8/9 (due April 9)

Exams...

- ▶ NO MORE EXAMS

Readings...

- ▶ computational geometry... light treatment in texts, EricksonNotes has more; notes of David Mount are highly recommended

Last class...

- ▶ low-dimensional linear programming
 - ▶ motivating questions
 - ▶ deterministic linear-time algorithm
(ref: N. Megiddo, Linear Programming in Linear Time When the Dimension Is Fixed, J.ACM (1984))
 - ▶ randomized incremental linear-time algorithm
(ref: R. Seidel, Small dimensional linear programming and convex hulls made easy, *Discrete and Computational Geometry* 6, 423-434 (1991))
 - ▶ applications... 1-centre problem

Today...

- ▶ two-dimensional searching...planar point location
<https://www.cs.ucsb.edu/~suri/cs235/Location.pdf>
- ▶ applications to geometric intersection problems

Coming up...

- ▶ motion planning problems