COMP 5713 Computational Geometry
Spring 2016
Prof. Siu-Wing Cheng
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News: No News.

Schedule

- Class venue: Room 1103,
- Lecture time: Mo 13:30 - 14:50; Fr 09:00 - 10:20

Textbook

- Computational Geometry: algorithms and applications by de Berg, van Kreveld, Overmas, and Schwarzkopf (second edition)

Assessment

- (30%) Written assignments. All assignments should be submitted at the beginning of the class on the due date.
- (30%) In-class midterm: TBA
- (40%) Final examintion: time and venue to be determined by ARR

Written assignment

The written assignments are in ps format. All assignments should be submitted at the beginning of the class on the due date. No late assignment will be accepted unless prior approval by the instructor is obtained.

Assignments	Date Out	Date Due	Suggested Solution

Handouts

The following are the lecture notes and the corresponding sections in the textbook. These are not detailed notes, so you should take notes in class and read the textbook before or immediately after the lecture.

The lecture notes are in ps format. You should have gsview and ghostscript installed on your system to view them.

Topics and Handouts	Chapter Reference
2D Convex Hull	Ch 1, 1.1
Plane-sweep: line segment intersection	Ch 2.1

Multidimensional Range Trees	Ch 5.1, 5.3, 5.4
Kd-Trees	Ch 5.2, 5.5
Arrangement and Duality	Ch 8
Linear Programming	Ch 4
Minimum Enclosing Disk	
Planar Point Location I	Ch 6.1, 6.2
Planar Point Location II	Ch 6.2
Voronoi diagram	Ch 7
Curve reconstruction	
Height Interpolation	Ch 9.1
Delaunay Triangulation I	Ch 9.2, 9.3, 9.4
Delaunay Triangulation II	Ch 9.2, 9.3, 9.4
3D Convex Hull	Ch 11.1, 11.3
Visibility Graph and Shortest Paths	
Approximate Anisotropic Shortest Paths	
Approximate Nearest Neighbor Search	
Frank-Wolfe Algorithm	
Approximate Minimum Enclosing Ball	
Geometric Approximation	