

CSCI-4290/6290: Robot Motion Planning
Lecture 7: September 20, 2005
Voronoi Roadmaps

Announcements

- Assignment 2 is due on Saturday, October 1. If you need a CS account, send me email with your RCS id by 5pm today.
- Prof. Dinesh Pai from Rutgers University will talk about “Multisensory Human Interaction” on Thursday, September 22 at 4:00pm in JEC 3117 (Refreshments at 3:30 pm).

Today’s Class

In the last class, we discussed visibility graphs. Today we look at another roadmap method that uses *Voronoi roadmaps* to plan the motion of a translating robot in the plane.

1. Voronoi diagrams of points
2. Voronoi diagrams of polygonal regions
3. Computing paths using Voronoi roadmaps (the *retraction* approach)

Reading

Chapter 5.2, Choset et al.

Chapter 5.3.3, LaValle.

Additional References

For Voronoi diagrams of points:

Chapter 7 of *Computational Geometry: Algorithms and Applications*, second edition, by M. de Berg, M. van Kreveld, M. Overmars, and O. Schwarzkopf, Springer, 2000.

Next Class

Trapezoidal decompositions.