

CSCI-4290/6290: Robot Motion Planning
Lecture 7: September 16, 2003
Voronoi Roadmaps

Announcements

Assignment 2 is due on Wednesday, October 1. If you need a CS account, send me email with your RCS id by the end of the day today.

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 5.2, *Planning Algorithms* by LaValle.

Chapter 4.2, Latombe. (optional)

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.