CSCI-4290/6290: Robot Motion Planning
Lecture 12: October 7, 2005
Collision Detection

Announcements

- Assignment 3 is due on Friday, October 14.
- Our next class is on Friday, October 14.
- The Midterm exam will be on Friday, October 21.

Today's Class

Today we look at *collision detection* and *distance computation*. Collision detection algorithms are particularly useful for motion planning in high dimensional configuration spaces, where computing an explicit representation of the c-obstacle regions is difficult.

1. Collision detection
2. Two phase approach
3. Bounding volumes and hierarchical methods
4. Incremental methods

Reading

Appendix F.5, Choset et al.
Chapter 5.3, LaValle.
Collision and Proximity Queries, by Ming Lin and Dinesh Manocha, from the *Handbook of Discrete and Computational Geometry: Collision detection*, second edition, 2004.

Next Class

Probabilistic roadmaps.