

CSCI-4290/6290: Robot Motion Planning
Lecture 11: October 4, 2005
Randomized Planning with Potential Functions

Announcements

- Assignment 3 is due on Friday, October 14.

Today's Class

Today we look at *randomized path planning with potential functions*. This variation of potential field methods was developed for high dimensional configuration spaces. It uses randomization to avoid being trapped in local minima.

1. Challenges of using potential functions for high dimensional configuration spaces
2. Best-first motions and random motions
3. Randomized Path Planner (RPP)

Reading

Chapter 5.4.3, 8.2, 8.4, LaValle.

Chapter 4, Choset et al.

Chapter 7.4–7.5, Latombe (optional).

Additional References

Robot Motion Planning: A Distributed Representation Approach, J. Barraquand and J.-C. Latombe, *International Journal of Robotics Research*, Vol. 10, No. 6, pages 628–649, December 1991.

Next Class

Collision detection.