

Assignment 4

CSCI-4290/6290: Robot Motion Planning

Due: Tuesday, October 21, 2003

Assignments are due at the beginning of class on October 21, and are to be done individually. Assignments will be graded on the basis of clarity and legibility. See course syllabus for late submission policy.

1. Please provide a brief description of the motion planning algorithm that you plan to implement for your final course project. Indicate the type(s) of robots your planner will support and the types of environments you will demonstrate it on.
2. The rest of this homework is a reading assignment. You are to submit a reading report on the following paper(s) that describe probabilistic roadmap methods. **Students in CSCI-4290 must provide a report on one of the two papers, and students in CSCI-6290 must provide a report on both papers.**
 - “Probabilistic Roadmaps for Path Planning in High-Dimensional Configuration Spaces”, L. E. Kavraki, P. Švestka, J.-C. Latombe, and M. H. Overmars, *IEEE Transactions on Robotics and Automation*, Vol. 12, No. 4, pages 566–580, August 1996.
 - “Visibility based probabilistic roadmaps for motion planning,” T. Simeon, J.-P. Laumond, and C. Nissoux. *Advanced Robotics Journal*, Vol. 14, No. 6, 2000.

Both papers will be available off the course web page.

Please follow the instructions in the accompanying sheet, *How to read a research paper* created by Prof. Wes Huang for the Mobile Robotics class. In particular, look at the section **How to write a reading report**. Your reading report may be up to **two** pages in length, and must be written on a computer.