Assignment 4
CSCI-4290/6290: Robot Motion Planning

Due: Friday, October 28, 2005

Assignments are due at the beginning of class on October 28, 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 assignment is a reading assignment. You are to submit a reading report on the following paper(s) that describe techniques for sampling-based algorithms. **Students in CSCI-4290 must provide a report on the first of the two papers, and students in CSCI-6290 must provide a report on both papers.**

   - "Effective Sampling and Distance Metrics for 3D Rigid Body Path Planning," James J. Kuffner. In 2004 IEEE International Conference on Robotics and Automation, pages 3993-3998, New Orleans, LA, April 2004.
   - "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**. For this assignment, your reading report may be up to **two** pages in length, and must be written on a computer.