

CSCI-4965/6963: Robot Motion Planning
Lecture 22: November 15, 2001
**Multiple Robot Coordination,
and Manipulation Planning**

Today's Class

1. We will continue our discussion of multiple robot coordination. We consider a decoupled planning approach, *path coordination* for multiple robots.
 - (a) Path coordination for two robots
 - (b) Coordination diagram
 - (c) Path coordination for multiple robots
2. Manipulation Planning:

Sangwon Oh will talk about *multi-arm manipulation planning*, where multiple robot arms are used to cooperatively move an object. Manipulation planning here is viewed as motion planning for movable objects.

Reading

Chapter 8.2, Latombe.

Chapter 11 through 11.4, Latombe.

References

Multiple path coordination for mobile robots: a geometric algorithm, S. Leroy, J.-P. Laumond, and T. Simeon. *16th International Joint Conference on Artificial Intelligence (IJCAI'99)*, pages 1118-1123, Stockholm, Sweden, 1999.

On Multi-Arm Manipulation Planning. Y. Koga and J.C. Latombe. Proceedings of the *IEEE International Conference on Robotics and Automation*, pages 945-952, 1994.

Next Class

Protein folding, and mobile robot mapping and localization.