

CSCI-4965/6963: Robot Motion Planning  
Lecture 20: November 8, 2001  
**Evader Pursuit Strategies,  
and Multiple Robot Coordination**

## Announcements

- Assignment 5 is now due on Monday, November 12.
- Please resubmit your (revised) course project proposal on Monday, November 12.
- CS Colloquium: Dr. Jeff Trinkle will talk about “Complete Motion Planning for Planar Polygonal Chains” **today** in DCC 324, 4:00–5:00 p.m.

## Today’s Class

1. Evader-Pursuit Strategies:

Bettina Schimanski will describe a visibility-based coordinated motion strategy for a team of pursuer robots to find an evader robot in a known environment.

2. We will then begin our discussion of *motion planning for multiple moving objects* by first considering motion planning for a robot among moving obstacles with known velocities. This is similar to an asteroid avoidance task for a spaceship.
  - (a) Configuration-time space
  - (b) Approximate cell decomposition approach
  - (c) Velocity tuning approach

## References

Finding an Unpredictable Target in a Workspace with Obstacles. S. M. LaValle, D. Lin, L. J. Guibas, J. C. Latombe, and R. Motwani. Proceedings of the *IEEE International Conference on Robotics and Automation*, Minneapolis, MN, 1997.

## Reading

Chapter 8 through 8.1, Latombe.

## Next Class

Multiple robot coordination, and kinodynamic planning.