

CSCI-4965/6963: Robot Motion Planning
Lecture 17: October 29, 2001
Nonholonomic Motion Planning

Announcements

- Course project proposal is due on Monday, November 5.

Today's Class

Today we continue our discussion of *nonholonomic robots* and motion planning techniques for such systems. We also look at the use of Lie brackets to determine whether a system is nonholonomic.

1. Review of two-phase nonholonomic motion planning
2. Lie brackets
3. Integrability, Frobenius theorem
4. Discretized planning (Barraquand and Latombe)

Reading

Chapter 9 through 9.6, Latombe.

Chapters 8 and 9, *Motion Strategy: Algorithms and Applications* by Steven M. LaValle. Available on the course web page.

Next Class

Nonholonomic motion planning, and Collision detection