



Computer Science Department
Honors Thesis Presentation



Melody Donoso

Improvising Rhythm Using Reinforcement Learning

Monday December 13, 2004

4:30 p.m.

McConnell 403

Refreshments provided!



Abstract

When humans play music they create their own versions of the score through variations in playing style, intentional improvisations and human error. Computers can be programmed to generate musical sequences – my thesis asks the question of how computers can improvise the rhythm of a musical sequence. I will present my work in rhythm parsing and using reinforcement learning for rhythm improvisation. I will discuss my implementation of the Sarsa reinforcement learning algorithm and how dynamic programming is used to assist it in rhythm improvisation.