CS148 Course Syllabus

Semester II, 1998/99

This is a brief summary of the topics that will be covered in CS148 this semester and the assignment due dates. An expanded version will be put on the course web pages in the near future, with links to the various handouts and also to addition information on the subjects that we talk about.

Reading question answers should be turned in on Wednesdays during class. Lab writeups should be turned in at your lab session in the same week as the class that they are listed with below. The Lisp lab is an exception, and should (optionally) be turned in during class on February 3rd.

Lecture 1 - Introduction, 1/27

Lecture 2 - Basic Systems/Basic Rex, 2/3

Readings Due

“Vehicles: Experiments in Synthetic Psychology”, Braitenberg, chapters 1-4
“An Imitation of Life”, Walter
“A Machine that Learns”, Walter

Labs Due

Lisp

Lecture 3 - More Advanced Robots/More Rex, 2/10

Readings Due

“Map Learning and High-Speed Navigation in RHINO”, Thrun et al

Labs Due

Robot Base
Rex I

Lecture 4 - Robot Architectures, 2/17

Readings Due

“The Whole Iguana”, Brooks
“Shakey the Robot”, Brooks

Labs Due

Rex II

Lecture 5 - Navigation, 2/24

Readings Due

“Behavior-Based Robot Navigation for Extended Domains”, Arkin
“Life in the Fast Lane”, Jochem and Pomerleau

Labs Due

Vehicles

Lecture 6 - Vision, 3/3

Readings Due

“Animate Vision”, Ballard
“The Polly System”, Horswill

Labs Due

Obstacles I

Lecture 7 - Learning, 3/10

Readings Due

“Automatic Programming of Behavior-Based Robots using Reinforcement Learning”, Mahadevan and Connell

Labs Due

Obstacles II

Lecture 8 - Midterm Contest

Lecture 9 - Multiple Robot Systems, 3/17

Readings Due

“Moving Furniture with Teams of Autonomous Mobile Robots”, Rus et al
“Issues and Approaches in the Design of Collective Autonomous Agents”, Mataric

Labs Due

Final Project Proposal

Spring Break, 3/31

Lecture 10 - Case Studies, 4/7

Readings Due

TBA

Labs Due

Final Project Milestone I

Lecture 11 - The State of the Art, 4/14

Readings Due

TBA

Labs Due

Final Project Milestone II

Lecture 12 - Philosophy, 4/21

Readings Due

"Intelligence Without Reason", Brooks
"Today the Earwig, Tomorrow Man?", Hirsh
"Where Am I?", Dennett

Labs Due

Final Project Milestone III

Lecture 13 - Talent Show