IT-3708 Syllabus, Spring 2014

Either of the schedules below may be revised during the semester, but probably not very much.

Lectures

January 7  Introduction to Swarm Robotics
January 14  Adaptivity in Swarms
January 21  Programming Swarm Robots
January 28  Introduction to Complex Adaptive Systems and Bio-Inspired AI
February 4  Introduction to Evolutionary Algorithms (EAs)
February 11 Representational Issues in Evolutionary Computation
February 18  Introduction to Artificial Neural Networks (ANNs)
February 25  Supervised and Unsupervised Learning in Neural Networks
  March 4  Evolution and Development of the Brain + Genetic Programming (tentative)
March 11  Evolving ANNs
March 18  Applications of Bio-Inspired AI
March 25  Knowledge Representation in ANNs
  April 1  Circus Circuits: A Collection of Interesting Neural Networks
  April 8  Reinforcement Learning in Neural Networks
April 15  EASTER BREAK - No class
April 22  Information Theory for Evaluating Emergent Intelligence
April 29  Emergent Intelligence and the Future of Bio-AI

Delivery Dates

Monday, January 27:  Project I (Report and Demo)
Thursday, February 20  Project II (Report only)
  Thursday, April 3  Projects III and IV (Report and Demo)
  Thursday, May 1  Project V (Report and Demo)
Working in Groups

Group work will be permitted on SOME of the projects, with maximum sizes varying. The following are the group constraints for each project:

1. Maximum group size = THREE
2. NO GROUPS. All reports must be delivered individually.
3. Maximum group size = TWO
4. Maximum group size = TWO
5. NO GROUPS. All reports and demos are individual work.

For each project, a report must be delivered that a) describes the overall structure of your system, b) verifies that your system runs properly and c) answers any questions in the assignment text. In some cases, a demonstration of the working code may be required.

The only acceptable excuses for late delivery are personal sickness or serious family matters such as funerals. Weddings, birthdays, mid-semester vacations and all the happy stuff doesn’t count! Conflicts involving multiple deliveries in different classes are NOT valid grounds for extensions. If you are curious as to whether your situation counts as a valid excuse, talk to the course instructor (well) ahead of the delivery date.