What is it all about?
General Admin

• Lecturer: Dr Terry Payne
  • Ashton Building
  • Email: T.R.Payne@liverpool.ac.uk
  • Surgery: Mon/Wed/Thur (email for appointment)

• Course Notes
  • Available from the web site as pdfs
  • Lectures will be screen cast and available from the web sites

• Web Site and Resources
  • General information
    • http://www.csc.liv.ac.uk/people/trp/COMP310.html
Module Delivery

• 3 Lectures per week
  • Lectures will be captured and uploaded to the stream site
    • Lectures from previous years have been lecture captured and available from the web site
    • Attendance is still expected!!

• No Lab Classes or Assignments
  • Revision Exercises will be made available

• The module will be 100% Exam
iTunesU

- The module was previously made available from iTunesU
  - Slides are available from iTunes
  - There may be some revisions in the current slides.

- Full materials available from the iTunesU application on iOS.
  - Links to papers
  - Lecture notes
  - Links to Screen Casts
Main Taught Material

• Introduction
  • what is an agent?
  • agents and objects
  • agents and expert systems
  • agents and distributed systems
  • typical application areas for agent systems

• Intelligent Agents
  • the design of intelligent agents - reasoning agents
  • agents as reactive systems
  • hybrid agents
  • layered agents

• MultiAgent Systems
  • classifying multi-agent interactions - cooperative versus non-cooperative
  • zero-sum and other interactions
  • what is cooperation?
  • how cooperation occurs - the Prisoner's dilemma and Axelrod's experiments
  • interactions between self-interested agents:
    • auctions & voting systems; negotiation
  • Interactions between benevolent agents:
    • cooperative distributed problem solving
    • coherence and coordination
    • argumentation, legal reasoning, dialogues
Course Text

• The module is based on Michael Wooldridge’s book:
  • An Introduction to MultiAgentSystems
    • Wiley 2009
    • http://www.cs.ox.ac.uk/people/michael.wooldridge/pubs/imas/IMAS2e.html

• The material has also been revised and updated over the last few years
  • Thanks go to both Mike (who used to teach this course) and additional material by Simon Parsons.
Module Aims

1. To introduce the student to the concept of an agent and multi-agent systems, and the main applications for which they are appropriate;
2. To introduce the main issues surrounding the design of intelligent agents;
3. To introduce the main issues surrounding the design of a multi-agent society;
4. To introduce a contemporary platform for implementing agents and multi-agent systems.
Module Objectives

At the end of the module, the student will be able to demonstrate:

1. Understand the notion of an agent, how agents are distinct from other software paradigms (eg objects) and understand the characteristics of applications that lend themselves to an agent-oriented solution;

2. Understand the key issues associated with constructing agents capable of intelligent autonomous action, and the main approaches taken to developing such agents;

3. Understand the key issues in designing societies of agents that can effectively cooperate in order to solve problems, including an understanding of the key types of multi-agent interactions possible in such systems;

4. Understand the main application areas of agent-based solutions, and be able to develop a meaningful agent-based system using a contemporary agent development platform.
Finally

• The obvious...
  • Switch off all mobile phones during lectures
  • Do not sign the register on behalf of others
  • Attend lectures and attempt the exercises set - this will help you do the continuous assessments
  • Ask questions if there is anything that you do not understand

• And respect your fellow students...
  • There are people here who want to learn!
  • If you want to talk or mess around, then fine...
  • ...BUT do it somewhere else!