CSG2341
Intelligent Systems

Introduction

Unit details

- Unit coordinator/lecturer
  - A/Prof Philip Hingston
  - Room: ML 13.233
  - Email: p.hingston@ecu.edu.au
  - Phone: 9370 6427
- Tutor
  - as above

From the unit outline

- Description
  - This unit is designed to introduce some of the popular techniques used for making a computer appear intelligent. The techniques included have recently been described as Computational Intelligence. This field is more oriented to numerical techniques than symbolic techniques. They include neural networks, evolutionary computing and fuzzy logic.

From the unit outline

- Content
  - Rule-based Systems
  - Fuzzy Systems
  - Artificial Neural Networks
  - Artificial Life
  - Evolutionary Algorithms
  - Hybrids
  - Swarm Intelligence

From the unit outline

- Classes
  - The unit will include two hours of lectures per week covering the content of the unit. In addition, there will be one hour of practical work per week in which students will either use packages demonstrating the use of the various techniques being covered or be preparing software that will be used in an investigation.
  - Online students should follow the weekly “This week” document from BlackBoard, and attend any online sessions organised by your tutor.

From the unit outline

- Assessment
  - Workshops* 10%
  - Assignment 40%
    - Part A (group) 15%
    - Part B (individual) 25%
  - Examination 50%
  - * This assessment item may include the cumulative assessment of workshop skills and reports.
  - In order to pass the unit, students must achieve at least one half of the available marks in the examination.

From the unit outline

- Text book
  - Negnevitsky, M. (2002/2005). *Artificial Intelligence: A Guide to Intelligent Systems*. London: Addison Wesley.

Schedule

Module 1	AI History/Rule-based Systems	Non-assessable workshop
Module 2	Fuzzy basics/fuzzy inference	Assessable workshop 2%
Module 3	Fuzzy expert system/fuzzy control	Assessable workshop 2%
Module 4	Artificial Neural Networks/Multi-layer Perceptrons	Assessable workshop 2%
Module 5	ANN applications/Other networks	Assessable workshop 2%
Module 6	Artificial Life	Non-assessable workshop Assignment Part A due
Makeup week - week beginning 7 April		
Mid-semester break – week beginning 14 April		
Module 8	GA Case Studies	Assessable workshop 2%
Module 9	Evolution Strategies/Genetic Programming	Assessable workshop 2%
Module 10	Hybrid Intelligent Systems	Assessable workshop 2%
Module 11	Evolutionary Game Theory/Swarm Intelligence	Assignment part B due

Note: Best 5 workshops contribute 10% of assessment

Questions

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