# 0: Overview

## AI6125: Multi-Agent System

Assoc Prof Zhang Jie

Based on "An Introduction to MultiAgent Systems" by Michael Wooldridge, John Wiley & Sons, 2002/2009

# Contact Information


- Dr. Zhang Jie
  - Assoc Prof, SCSE
  - Office: N4-2C-100
  - Phone: 6790-6245
  - Email: zhangj@ntu.edu.sg
  - Office Hour: Wednesday, 5:15pm–6:15pm; or by appointment

# Who should Take this Course

- Be interested and able to think!
  - Don’t expect to have everything on a plate.
- You should have reasonable programming skills (Java) – for the coursework.
- Have some interest in A.I.
- Like to think about problems/problem solving.

# Rules and Strong Suggestions

- Before class
  - Read relevant chapters in the textbook and reference materials
- During class
  - You may ask questions at any time
  - DO NOT MAKE NOISE!
- After class
  - Review concepts covered in the classes
  - Start assignment early
  - Contact me if you have questions or bring your questions to the classes

# Course Objectives

- Understand the variety of connotations that multi-agent based computation implies and appreciate how the field fits into Artificial Intelligence and more broadly, Computer Science
- Gain awareness of several advanced applications of multi-agent systems
- Understand the importance of agent learning and reasoning, and how and why this should be incorporated into an embodied agent for making simple and complex decisions
- Differentiate and motivate various agent architectures and also understand the historical development of the agent architecture field
- Understand how benevolent agents work together to perform distributed problem solving.
- Appreciate the value of game theory when applied to multi-agent systems populated by self-interested agents, and understand how these agents interact with each other and make complex decisions

# Textbook and Expected Reading

- Textbook
  - Michael Wooldridge, An Introduction to Multi-Agent Systems - Second Edition, John Wiley & Sons, 2009
  - QA76.76.I58W913A 2009 (Lee Wee Nam Library), 3 copies available for 2 hours
  - E-book of the first edition, XX(813298.2)
  - NTU Bookstore: Booklink Pte Ltd, Blk S4, Level B5 (S4-B5A-01); Tel no: 6734 9091
- Reference Material
  - S. Russell and P. Norvig. **Artificial Intelligence: A Modern Approach**. Prentice-Hall, third edition, 2010 (Q335.R967a 2010)
  - Jacques Ferber, Multi-Agent System: An Introduction to Distributed Artificial Intelligence, Harlow: Addison Wesley Longman, 1999 (TJ217.5.F346)

# Course Assessment

- No Final Exam!
- Two Assignments
  - First assignment: Literature Review Report - 20%
  - Second assignment – 20%
- Project Demo and Presentation - 20%
- Project Report - 40%