CS 470/670 Artificial Intelligence

Examination Review

Fall 2013

Wei Ding

Schedule

The examination is close-book and close-note. However, you can prepare a cheat sheet using ONE piece of paper (size 8.50" * 11.00", double side, no less than 11-font size and single line space).

There are **65 minutes** for the Examination.

Class Time	**Exam Time**
4:00 PM	4:05 PM – 5:10 PM Wednesday October 23
Must be at class room at 4:00 PM sharp	Assume it takes 5 minutes to distribute the examination papers

Preparation Materials

Lecture notes, examples posted at class web site and UMassOnline, homework assignments, and textbook.

Note: If there are any inconsistency between the lecture notes and the textbook, use class lecture notes.

Topics

1. Everything you have practiced in homework
   You will not be asked to write a computer program in the exam, but you are expected to be familiar with the following topics.
   - Problem formulation of solving problems by searching (states, initial state, actions, transition model, goal test, path cost)
   - Use examples to illustrate uninformed search including breadth-first search, depth-first search, and iterative deepening search
   - Use examples to illustrate A* search and Greedy Best First Search
   - Understand how to define a heuristic function for informed search
2. All the questions we have practiced in the class
   Midterm exam questions will be similar as those in-class exercises questions.
3. The Lecture of
   - Introduction to AI

- 4 categories of AI
- Turing test
- Definition of Machine Learning
- Rational behavior

- Solving Problem by Searching
  - Goal-based agents
  - T() and O()
  - NP and inherently hard problems
  - b, d, m for time and space complexity
- Uninformed Search Strategies
  - Understand how to calculate the properties of time, and space for different search strategies.
- Informed Search and Exploration Part I
  - Understand how to analyze the optimality and completeness of different search strategies.
  - Understand the proof of optimality of A*
  - Repeated state in A*