CS573 — Artificial Intelligence I
Fall 2001
MWF 12:30 – 1:20, MOR 230

Syllabus

Artificial intelligence (AI) is the study of computational theories of reasoning, perception, problem-solving, and learning. This course will provide a broad introduction to many areas of AI, including search, game-playing knowledge representation, planning, logical and probabilistic reasoning, and natural language understanding. We will concentrate on understanding the fundamental algorithms that lie behind a wide variety of successful AI applications.

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> **Office hours:** Monday 2–3pm or by appointment

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Online Materials

The course home page is

> http://www.cs.washington.edu/education/courses/573/01au/

The course majordomo list is cse573@cs.washington.edu .

Texts

1. *Artificial Intelligence: A Modern Approach*, Russell & Norvig.
2. Supplementary handouts to be distributed in class.

Assignments

1. Problem sets will be handed out on Fridays and due one week later. Problem sets will consist of a mixture of paper-and-pencil exercises, short essays, and progamming projects.
    - You may use any programming language you like for most of the programming assignments. The Linux compute servers and NT workstations will provide Java, C++, and Lisp. Some assignments may need to run under Linux to allow simple interprocess communication.

2. The programming assignments will be done in groups of 2 or 3. Some programming assignments will build on each other to create a project, *e.g.*, a chess-playing program.

3. The TA will hand back problem sets one week after they are received along with solution sets.

4. Reading assignments should be done before or concurrently with the class on the topic. Think critically about what you've read and come to class with questions, ideas, counter-arguments, you name it. **Initial reading assignments:**

   - Week 1: Chapters 1 and 3 (by Friday Oct 5th)
   - Week 2: Chapters 4 and 5 (by Friday Oct 12th)

Course Outline

This outline is approximate and will be modified.

1. Intro to AI, uniformed search
2. Informed search, game playing
3. Constraint satisfaction and satisfiability
4. Knowledge representation and expressivity/tractability tradeoff
5. Planning and autonomous systems
6. Probabilistic reasoning
7. Machine learning
8. Natural language understanding

Grading

The following breakdown is approximate:

- 30% midterm and final
- 70% problem sets
- 10% class participation

Note: class participation can only *improve* your grade. Some assignments will contain extra-credit parts that can only improve your grade.

Exams

- Midterm is Wednesday, October 31st, in class.
- Final is Wedesday, December 19, 8:30am – 10:20am.