CSE 573: Artificial Intelligence I

Instructor:

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What is AI?

- Automation of reasoning, problem solving, learning
- Study of mental faculties through computational models
- Making computers do what people currently do better
- Study of heuristic solutions to NP-complete problems
- Take class & create your own definition

What Can You Do with AI?

- Beat Kasparov at chess
- Prove new theorems in mathematics
- Do medical diagnosis better than doctors
- Design new drugs
- Design a robot that runs errands

What Can You Do with AI? (Contd.)

- Organize the deployment of US troops & equipment in the Gulf
- Solve complex scheduling problems in manufacturing
- Predict the stock market
- Create more realistic characters for computer games
- Do Web startup, become millionaire

Syllabus

- Problem solving and search
- Representation and reasoning
- Uncertainty
- Machine learning
- Planning
- Natural language understanding

Assignments

- **Final** (40% of grade)
- **Two projects** (each 30% of grade)
  Tentatively:
  - Propositional reasoning (satisfiability solvers)
  - Inductive learning (model ensembles)

Assignments (Contd.)

Each project is “mini research project”:

- **Implement** two state-of-the-art algorithms
- **Experiment** and compare
- **Interpret** results
- **Improve**: Design & test improved algorithm

Source Materials

- **Textbook:**
  Artificial Intelligence: Theory and Practice
  by T. Dean, J. Allen & Y. Aloimonos
  Addison-Wesley
- **Papers**

To find out more … Come to class

(MWF 12:30–1:20 EE1 025)