

CSE 473: Introduction to Artificial Intelligence

Instructor:
Pedro Domingos

Administrivia

- **Instructor:** Pedro Domingos
Email: pedrod@cs
Office: 216 Sieg Hall
Office hours: TBA, and by appointment
- **TA:** Will Portnoy
Email: will@cs
Office: TBA
Office hours: TBA, and by appointment
- **Class web:** <http://www.cs.washington.edu/473>
- **Mailing list:** cse473@cs

Source materials

- **Textbooks (required)**

Artificial Intelligence: A Modern Approach
Stuart Russell and Peter Norvig
Prentice-Hall

Machine Learning
Tom Mitchell
McGraw-Hill

- **Papers**

Assignments

- Two programming projects (20% each)
 - Game playing
 - Machine learning
- Midterm and final (20% each)
- Homeworks (20% total)

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

What can you do with AI?

- Beat Kasparov at chess
- Prove new theorems in mathematics
- Do medical diagnosis better than doctors
- Design new drugs
- Query databases in English
- 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
- Design software agents that search the Web for you

Topics for this quarter

- Problem-solving and search
- Representation and reasoning
- Machine learning

Ancestors of AI

- Computer science
- Mathematics
- Philosophy
- Probability and statistics
- Decision theory and economics
- Psychology
- Biology
- Control systems
- Operations research

History of AI

- 50's: AI is born; neurons, games, logic
- 60's: Youthful enthusiasm; search, microworlds, the rift
- 70's: Knowledge representation
- 80's: AI becomes an industry; neural nets return
- 90's: AI matures; realistic applications, probability, learning, the Web