

CSE 473:
Artificial Intelligence

Instructor:
Pedro Domingos

Administrivia

- **Instructor:** Pedro Domingos
Email: pedrod@cs
Office: CSE 648
Office hours: TBA
- **TA:** Andrew Guillory
Email: guillory@cs
Office: TBA
Office hours: TBA
- **Class web:** <http://www.cs.washington.edu/473>
- **Mailing list:** cse473@cs

Source materials

- **Textbook**

Artificial Intelligence: A Modern Approach (3rd. ed.)

Stuart Russell and Peter Norvig

Prentice-Hall

(Required)

- **Papers**

Evaluation

- Four assignments (16% each):
 - Problem solving and search
 - Representation and reasoning
 - Uncertainty
 - Machine learning
- Final (36%)

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
- Uncertainty
- 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-00's: AI matures; realistic applications, probability, learning, the Web