CSE 150. Intro to AI

Probabilistic Reasoning and Decision-Making

Welcome to CSE 150!

"I've always considered the most boring 20 minutes of the semester the time I spend reading the syllabus on the first day of class.

Students come in, potentially excited about getting started, only to end up listening to me read aloud.

I imagine them paraphrasing in their heads one of my favorite Woody Allen lines: Thanks, but I've been doing my own reading since about the first grade."

http://chronicle.com/weekly/v53/i02/02c00201.htm

Who uses probabilistic methods in AI and ML?

- Google - pattern matching
- Amazon - customer profiling
- Microsoft - multimedia OS
- Wall Street - time series prediction
- Game makers - enemy AI
- FBI - forensic speaker ID

Prerequisites

- Programming
  - Homeworks will involve coding.
  - Also: basic data analysis and visualization.
  - Solutions accepted in any language!
  - Java, C/C++, MATLAB, Perl, Python, etc.
  - No hand-holding with compiling, debugging.

Non-CS majors are welcome.

Prerequisites

- Elementary probability
  - Random variables
  - Expected values
- Calculus
  - Computing derivatives
  - Computing maxima and minima
- Linear algebra
  - Matrix multiplication, inverses
  - Solving systems of linear equations

Readings versus lectures

- Readings
  - No truly required texts.
  - Some handouts in class.
- Lectures
  - Designed to be self-contained.
  - Important for homework assignments.
  - Emphasis on mathematical development.
  - Blackboard, not powerpoint!

Homework

- Academic dishonesty
  - OK to use published and online texts.
  - Not OK to plagiarize from other students.
  - Cheating will be severely punished.
- Rules of the game
  - One extension: no questions asked.
  - Other late assignments: half credit.
  - Working in groups is allowed.
  - Write (but do not type) up your own solutions.

Medical diagnosis

(http://www.norsys.com/net_library.htm)