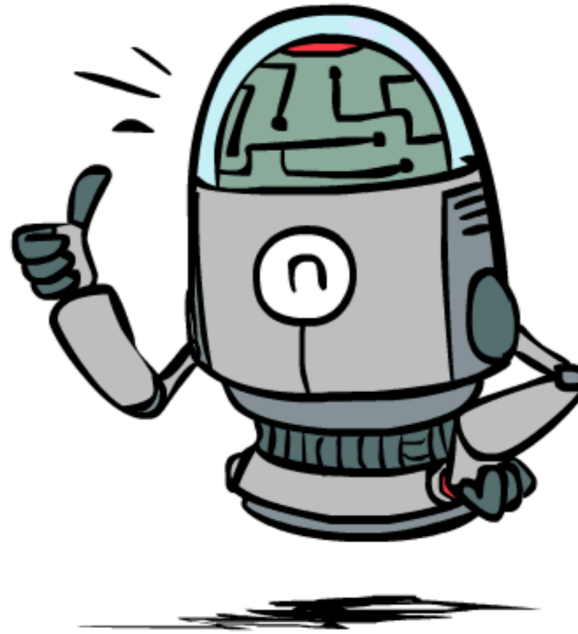


CS 5522: Artificial Intelligence II

Midterm Review



Instructor: Wei Xu

Ohio State University

[These slides were adapted from CS188 Intro to AI at UC Berkeley.]

Midterm

- The midterm will be closed notes, books, laptops, and people.
- 80 minutes in class.
- Preparation:
 - Lecture Slides
 - Hand-out Exercises
 - Practice Midterm
 - Project 1: Search in PacMan
 - Project 2: Mutli-Agent PacMan

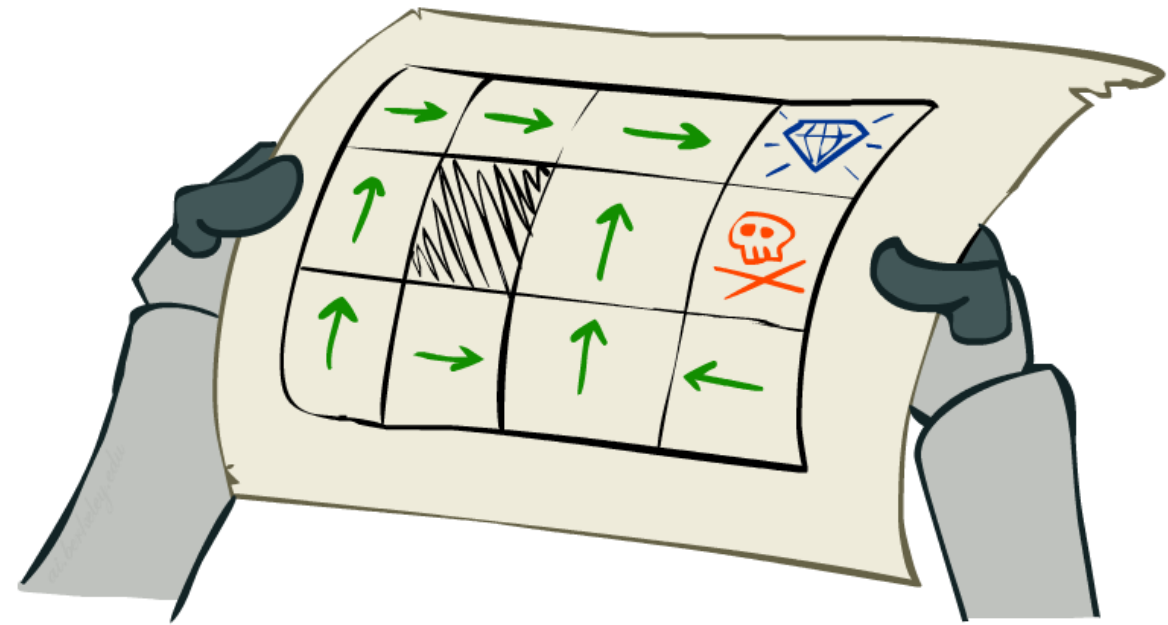
Midterm (20%)

- Make sure you **understand** the fundamentals in addition to being able to procedurally execute algorithms.
- The exam will not test your knowledge of Python, however questions may assume **familiarity with the projects** and test ability of **writing pseudocode**.
- See **hand-out exercises** and **practice midterm** for examples

2% extra credit for submitting
your solutions in lecture on
Friday 3/2 by 11:10am

Possible Midterm Topics

- Markov Decision Processes:
 - The maximum expected utility (MEU) principle
 - Reflex agents and policies
 - Markov decision process definition
 - Reward functions, values and q-values
 - Bellman equations
 - Value iteration
 - Policy iteration
 - Be able to formulate a problem as an MDP (e.g. Gridworld; mini-blackjack)
- Probabilities



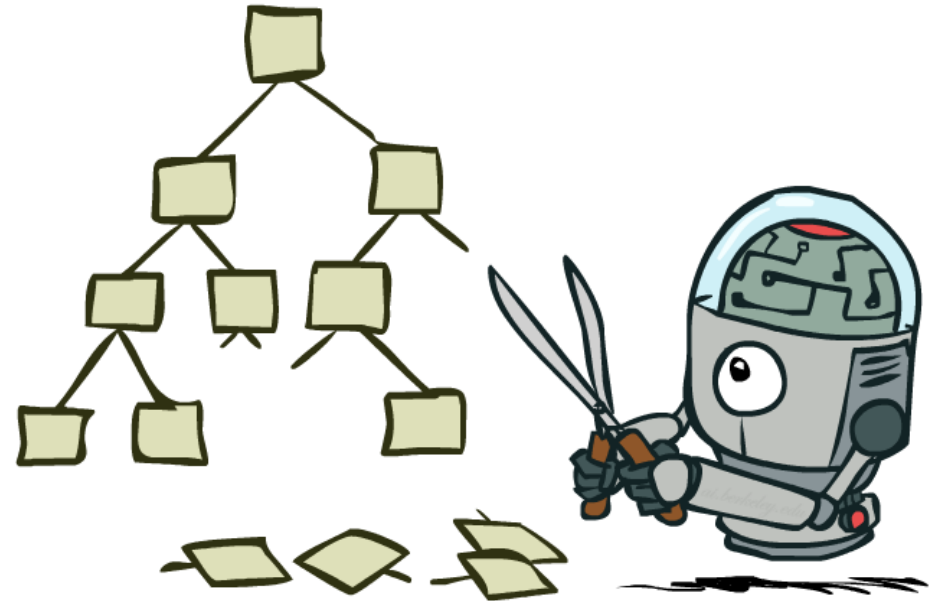
Possible Midterm Topics

■ Search:

- BFS, DFS, USC, A*, Greedy Search
- Tree search vs. Graph Search
- properties: completeness and optimality
- Heuristics: admissibility and consistency

■ Games:

- Minimax search
- Alpha-beta pruning
- Expectimax search
- Evaluation functions



Possible Midterm Topics

- Will not cover the follows:
 - Utility theory
 - Reinforcement learning
 - Markov model

Office Hour this/next week

- Midterm - Wednesday, Feb 28th 4-5pm (DL 495)
- Midterm - Monday, March 5th 12:30-2pm (DL 495)
- no office hour - Wednesday March 7th

- Project #2 - TA hour Thursday 10:30-11:30am (DL 580)