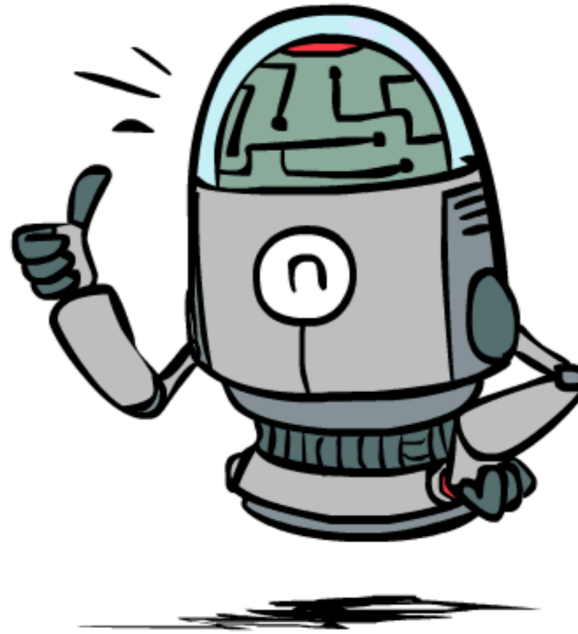


# CS 5522: Artificial Intelligence II

## Final Review



Instructor: Wei Xu

Ohio State University

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

# Final Exam

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- The final exam will be closed notes, books, laptops, and people.
- 90 minutes. 4/25 Wednesday 12:00-1:30pm. This room.
- Preparation:
  - Lecture Slides
  - Hand-out Exercises
  - Practice Final
  - Project 3: Reinforcement Learning
  - Project 4: Ghostbusters

# Final Exam (20%)

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- 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 final** for examples

2% extra credit for submitting  
your solutions in lecture on  
Friday 4/20 by 11:10am

# Possible Final Exam Topics

- Markov Decision Processes:
  - Markov decision process definition
  - Reward functions, values and q-values
  - Bellman equations
  - Value iteration
  - Policy iteration
- Reinforcement Learning
  - Q-learning
  - Approximate Q-Learning

## Project 3: Reinforcement Learning

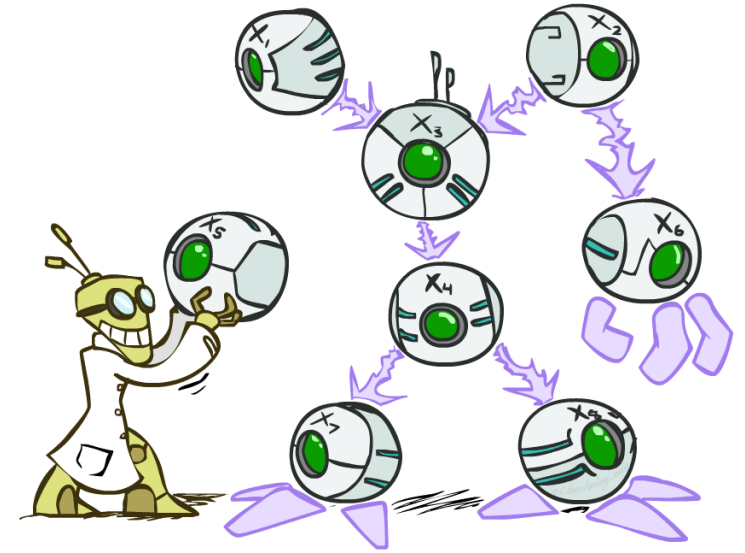


Pacman seeks reward.  
Should he eat or should he run?  
When in doubt, Q-learn.

# Possible Final Exam Topics

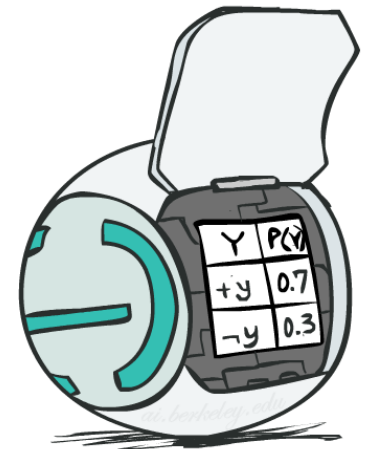
## ■ Markov Models and HMMs:

- Markov Model and HMM definition
- Observation and Time Elapse
- Exact Inference
- Approximate Inference
- Particle Filtering
- Most Likely Explanation



## ■ Bayes Nets:

- Probabilistic Representations
- D-Seperation
- Inference
- Variable Elimination



# Possible Final Exam Topics

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- Will not cover the follows:
  - Policy Gradient Methods
  - Deep Reinforcement Learning
  - Neural Networks
  - Perceptron
  - Naive Bayes
  - Speech Recognition
  - Computer Vision
  - Robotics
  - Natural Language Processing

# Office Hour this/next week

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- Office Hour - Friday, 4/20 4-5pm (DL 495)
- Office Hour - Monday, 4/23 1-2pm (DL 495)
  
- TA hour (project 4) - Thursday 4/19 10:30-11:30am (DL 580)