

Washington State University
School of Electrical Engineering and Computer Science
Fall 2021

CptS 440/540 Artificial Intelligence

Homework 1

Due: September 2, 2021 (11:59pm pacific time)

General Instructions: Put your answers to the following problems into a PDF document and upload the document as your submission for Homework 1 for the course CptS 440 Pullman (all sections of CptS 440 and 540 are merged under the CptS 440 Pullman section) on the Canvas system by the above deadline. Note that you may submit multiple times, but we will only grade the most recent entry submitted before the deadline.

1. Go <https://www.cleverbot.com> and engage the chatbot in a conversation. Enter at least 10 comments/questions and copy the entire conversation into your homework. Based on this conversation explain why you think CleverBot does or does not pass the Turing Test.
2. Suppose you want to design an intelligent pizza-delivery robot, similar to Domino's (<https://media.dominos.com/stories/nuro-story>).
 - a. Describe two different sensors, two different actuators, and two different performance measures relevant to this task?
 - b. For each of the following task environment properties, choose which option is most appropriate for this task. Include a brief explanation for each.
 - i. Fully observable or partially observable?
 - ii. Single agent or multi-agent?
 - iii. Deterministic or stochastic?
 - iv. Episodic or sequential?
 - v. Static or dynamic?
 - vi. Discrete or continuous?
 - c. Of these four agent types (simple reflex, model-based reflex, goal-based, utility-based), which is most appropriate for this task? Include a brief justification for your choice.
3. *CPTS 540 Students Only:* List the complete citation for two different research papers about chatbots (conference or journal) published after 2010. Be sure to include a URL to the paper. Note: arXiv papers are not “published” papers.