

CS101: HW 5

Due: May 7, 2018

Submission Instructions: Type your answers to the following questions in a .doc or .txt file and submit on Canvas.

Artificial Intelligence Exercises

1. For each of the three applications of artificial intelligence we talked about in class (Natural Language Processing, Artificial Vision, and Robotics), describe a real-world example (that we did not discuss in class).
2. Describe one idea you had about artificial intelligence prior to Tuesday's lecture. What was true in that conception? What have you learned since then that changed your conception?
3. Pick a problem that you see in society. How might artificial intelligence help solve or address that problem?
4. Find a problem that was mitigated by artificial intelligence. Describe the artificial intelligence used to address that problem. (This artificial intelligence technology should be different from those you discussed in problem 1).
5. List one individual who supports artificial intelligence and another who is wary of it. What are the arguments of each individual?

Exercises from Thursday's Lecture (on the next page)

Theory Questions

- Describe a problem that you could solve with a computer (that we didn't talk about in class) and a way to solve it. Is the solution constant, polynomial, or exponential?
- Describe a sorting algorithm that we didn't talk about in class (or design your own). It doesn't need to be fast and can be as creative as you'd like! Hint: pay attention to how you sort things.
- Below is a Turing Machine. Give an example of an input it accepts, an example of an input it rejects, and a general rule for the types of strings it will accept.

