

Homework 1: Introduction to Robotics

Due: Beginning of class, Wednesday 18-Jan-2017

Problem 1. For a robot of your choosing find a peer-reviewed journal article or a conference paper that describes the robot. Find your article by visiting one of the following sources using a campus computer:

- IEEE Xplore (<http://ieeexplore.ieee.org/Xplore/>)
- Google Scholar (<https://scholar.google.com/>)

List the name of the robot and what group designed it. Also list the actuators, sensors, batteries, and computer/micro-controller used by the robot. Write a brief paragraph describing what the purpose of the robot is and any other interesting facts you find. Include a proper IEEE-style citation of the article you used. (For information on the IEEE-style citation visit: <https://www.ieee.org/documents/ieeecitationref.pdf>)

Problem 2. What are some jobs performed by humans where a robot would be better suited? Do you agree with replacing human workers with robots? Explain your answer.

Problem 3. In what ways do robots differ from household appliances? In what ways do they differ from humans? In your opinion, will it be possible to one day fabricate rationally thinking, sentient robots?

Problem 4. In your opinion, what would be the ideal way to interact with a household robot that helps with chores? Include details such as the following:

- Should it follow you around or hide itself in the closet and only come out when summoned?
- Should the robot interact verbally with you, or via an interface (e.g., computer/smart phone)?
- What chores would you like the robot to do?
- Would you prefer to teach it exactly how you want things done?