

Homework 1: *Impactful Robots*

Due: Thursday, August 28, 2014, at the beginning of class (11:10AM)

[Submit your homework electronically to the course BlackBoard website by the deadline. Your submission must be in a single pdf file. *No other formats are acceptable.* Be sure to put your name at the top of your homework.]

1. **[Everyone]** Carnegie Mellon University has a world-class Robotics Institute. In this tradition, they have formed the Robot Hall of Fame that recognizes impactful robots created over the years. Have a look at the Robot Hall of Fame here: <http://www.robothalloffame.org/>. Some of the robots in the Robot Hall of Fame are robots from the movies, so they aren't actual functioning robots, although they did have a strong impact on society, and provide expectations for what robots can/should do. Other robots were actual robots, either from research labs or industry, which were designed to have some important function.

In this exercise, you should select 3 of the robots from the Robot Hall of Fame that were actual functioning robots (e.g., R2-D2 and the Terminator are examples of robots that were not functioning robots). For each of the 3 robots you choose, do some research on the robots and write up a brief summary of these robots. Your summary should at least include the following:

- Name of the robot
 - Picture of the robot
 - Who developed it
 - Where it was developed
 - When it was developed
 - What the functionality of the robot is/was
 - What the limits/shortcomings of the robot are/were (within the domain for which it was designed)
 - Why this robot is well-known and impactful
 - URL(s) and/or literary reference(s) that describe the robot in more detail
2. **[Everyone]** From your research in part 1, write a paragraph on what you think is so difficult about creating robots with fully human-like, autonomous, capabilities. What do you think are the key challenges?
 3. **[Grad students only]** Notice that the web form for submitting nominees for the 2014 class for the Robot Hall of Fame is still available online (although the date for submissions has passed). What robot would you nominate (which is not already in the Hall of Fame)? Which category is your selection (see the choices here: <https://www.cs.cmu.edu/registration/rhof/>)? Give the same details about your robot choice as in question #1 to describe your selection. Additionally, state why you would have chosen this robot for the Robot Hall of Fame (given that you had lots of robots to choose from!).