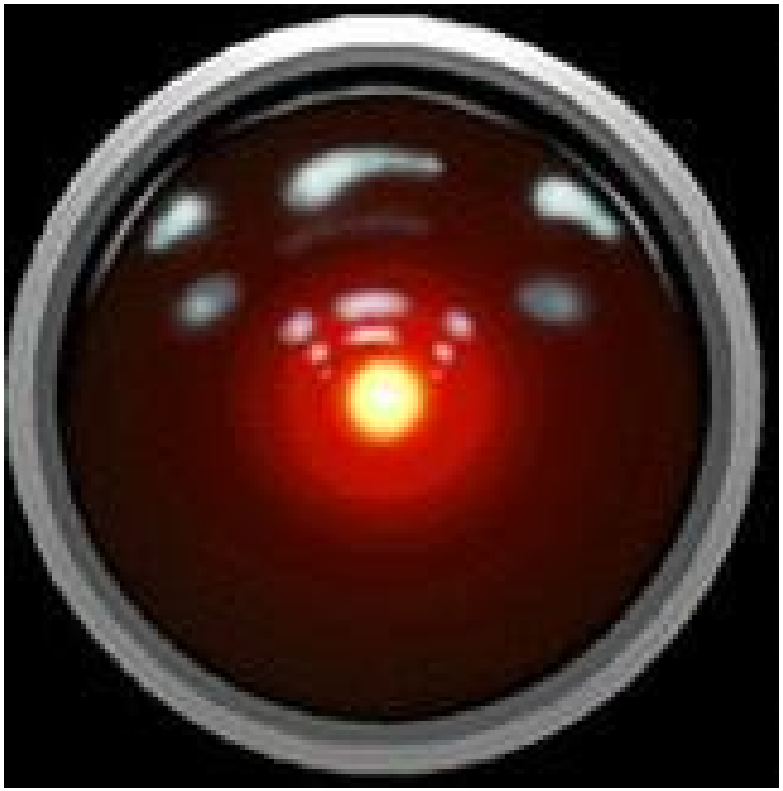


CS 378: Autonomous Intelligent Robotics

Instructor: Jivko Sinapov

http://www.cs.utexas.edu/~jsinapov/teaching/cs378/

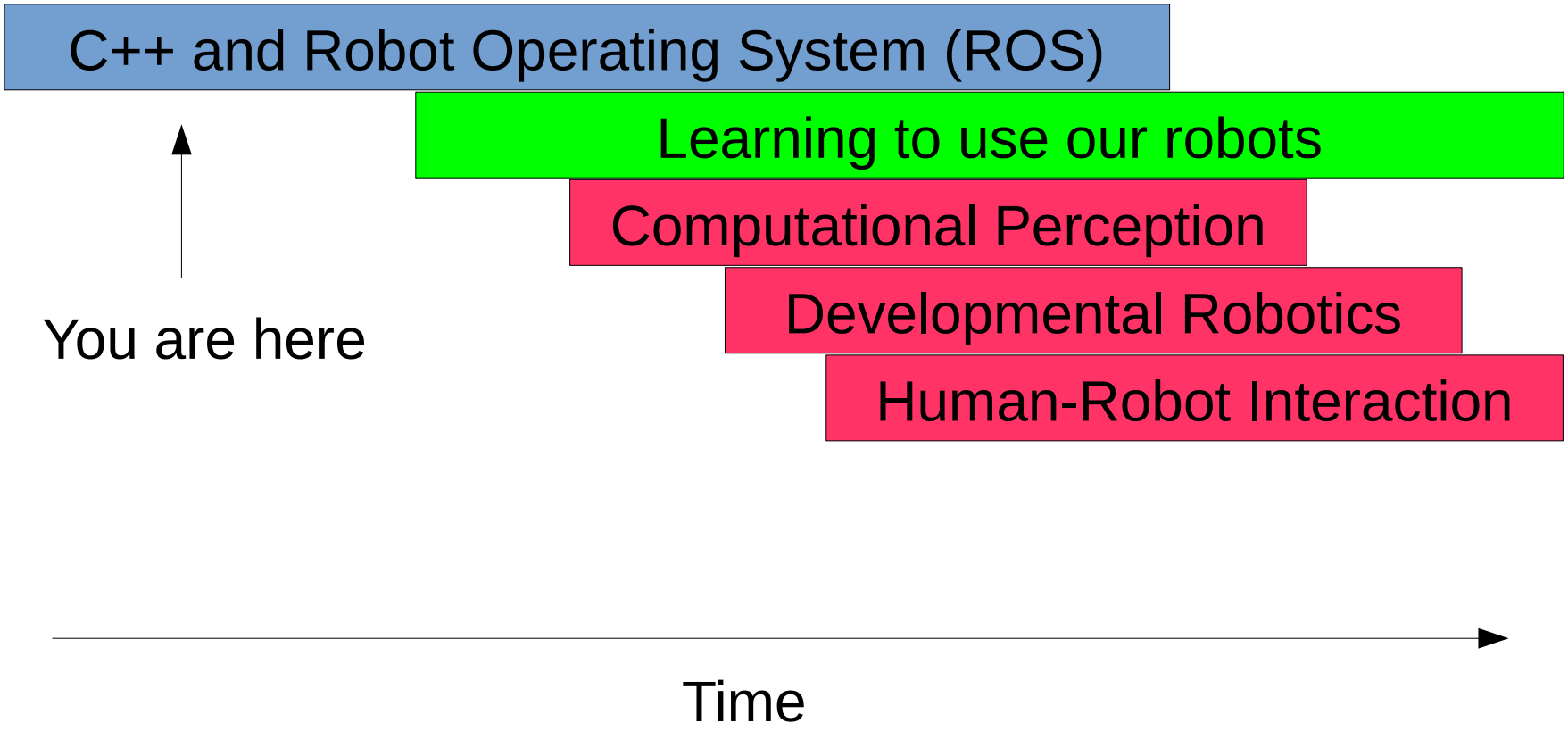
Readings for this week

Maruyama, Shin, et al. "Change occurs when body meets environment: An essay on the embodied nature of development." (2015)

ROS Tutorials (1.1)

http://wiki.ros.org/ROS/Tutorials

Semester Schedule



Reading Discussion

Stoytchev, Alexander. "Some basic principles of developmental robotics." Autonomous Mental Development, IEEE Transactions on 1.2 (2009): 122-130.

“The paper talks about training robots in a subjective, incrementally developmental manner likened to that of raising and training a child. How can we achieve this level of sophistication in more rapid ways than training our robots for months on end? Conversely, have any experiments been conducted pertaining to long term training of machine learning and developmental robots?”

Stoytchev, Alexander. "Some basic principles of developmental robotics." Autonomous Mental Development, IEEE Transactions on 1.2 (2009): 122-130.

“1) In the article, Stoytchev states that developmental robotics is still in a state of infancy. What stage are we in now?

2) How is the verification principle put into practice technically?”

Stoytchev, Alexander. "Some basic principles of developmental robotics." Autonomous Mental Development, IEEE Transactions on 1.2 (2009): 122-130.

“... the most confusing thing to me was the idea of grounding. I do not completely understand the calculation of temporal contingency and how this allows scientists to perform grounding. The idea of action-outcome pairs makes sense, but how this relates to grounding is above my head”

“CoBots: robust symbiotic autonomous mobile service robots." Proceedings of the 24th International Conference on Artificial Intelligence. AAAI Press, 2015.

“CoBots: robust symbiotic autonomous mobile service robots." Proceedings of the 24th International Conference on Artificial Intelligence. AAAI Press, 2015.

“I was excited to read the update on CoBot, but this reading made me question the principles on which CoBot was built. Dr. Stoytchev clearly acknowledges that his system of principles based on verification is not the only one, and I think it could be interesting to read what the CoBot team would define as the most basic principles of developmental robotics. CoBot certainly meets some of Dr. Stoychev’s requirements, but doesn’t seem quite capable of verifying knowledge for itself or building its knowledge base, although the project does seem to be moving in that direction. “

“CoBots: robust symbiotic autonomous mobile service robots." Proceedings of the 24th International Conference on Artificial Intelligence. AAAI Press, 2015.

“I loved the idea of the robots communicating with one another in order to organize tasks. It is an efficient idea for the robot closest to the objective to pick up the task. From the first CoBot article I got the impression that the robots would be a nuisance if they were constantly stopping people to ask for help but in this article it explains that the robot calculates cost of asking. From this I think it wouldn’t be too bad if a robot asks you to do something you were going to do in the first place though I would hate to have the office closest to the elevator.”

Basic Linux Shell Commands

Commands to know:

ls : list files in current path
cd : change directory
pwd: show current path
rm : remove file

The .bashrc file

Installing applications, text editors, etc.

Basic Linux Shell Commands

Cheat sheet:

http://cli.learncodethehardway.org/bash_cheat_sheet.pdf

Back to ROS

1) Review of key concepts: nodes and topics

2) Example with *turtlesim*

Back to ROS

1) Creating a ROS package (first, what is a ROS package?)

2) Creating and compiling a ROS node within our package

3) Running the ROS node from the command line

THE END