Administrivia:

- Lab 3 (Roomba Object seeking) will be in the Sunlab Thursday during the class period. We will break up into 6 groups (of 2-3 students) for running the lab, these will be your groups for the first project.

- Project 1 (Subsumption Roomba Pac-Man) has two upcoming due dates: demos of your Pac-Man client during class on 10/5 and submission of individual project writeups on 10/9. The 10/5 demos will be held on in the CIT 5th floor atrium.
• From our last meeting, what is a control policy?
  – What are the spectrum of approaches to autonomous control?
  – What does a control policy need in order to make appropriate decisions?

• What is the difference between sensing and perception?
  – How does this distinction apply to mobile robots?

• In general, what types of information does a robot need to perceive for making appropriate decisions?
  – Consider the maze exiting and Pac-Man examples
  – Consider situations where the robot must interact with a human or other robots, such as in assistive care, search-and-rescue, teleoperated manipulation
  – When perceptual information is sufficient for autonomous control in these scenarios?

• Given a robot Pac-Man scenario, how would we construct a reactive control policy
  – Assume the robot has partial observability, given through its laser rangefinding, blobfinder, and position odometry
  – What reactive rules would we need?
  – What information need to be perceived to enact each rule?
  – How would we compose these rules together?

• Given the same scenario, how would we construct a deliberative control policy
  – Assume the robot has partial observability and an occupancy map
  – What information does the robot need to perceive?
  – How do we infer the spatial location from partial observables?
  – Can we say something about the distribution of possible robot locations?
  – How does this distribution change given the robot’s sensory data?
  – How does this distribution change as the robot moves?

• How could the deliberative approach be modified to function without a given occupancy map?

• How could we leverage the strengths of both deliberative and reactive approaches to control?