

ECED 6640.03 Mobile Robotics

Assignment #1

Due date: in two weeks.

Assignment #1 contains the following problems:

- 1) Many robot information sources are available, including the Internet and local Library. Identify which robotics journals are available locally and which conference proceedings are available. Search the World Wide Web for the resources available there. Also search some literature on single wheel robot, one legged robot.
- 2) Take a robot from literature. What is the robot designed to do? How is the robot constructed? How does it sense its environment? How does it move about within its environment?
- 3) Investigate an industrial robotic system currently in production. What task is the system designed to perform? What limitations does the system place on its operational environment? What level of human operator interaction is required?
- 4) Take a task from which mobile robots are often proposed (e.g., carpet vacuuming). Estimate the financial cost associated with having the task performed by a human for a 5-year period. Estimate the cost associated with developing and supporting a robotic solution for this task. Does it make economic sense to build an autonomous robot for this task? What assumptions would have to change in order for the robotic system to be more cost-effective?