

Assignment 3

The objective of this assignment is for you to become familiar with the Turtlebot 2 robot.

1. Ensure that your assigned robot is functional.

Look over the tutorials available in:

<http://wiki.ros.org/Robots/TurtleBot>

Your robot is using the kobuki base.

Follow the following articles:

<http://spectrum.ieee.org/automaton/robotics/diy/new-turtlebot-tutorials>

<http://spectrum.ieee.org/automaton/robotics/diy/turtlebot-2-unboxing>

<http://www.cse.sc.edu/~jokane/teaching/574/notes-turtlebot.pdf>

Follow the tutorials, in particular the depth image to laser scan:

http://wiki.ros.org/depthimage_to_laserscan

2. Random Walk 100%

Modify the code from Assignment 1 to perform random walk with the actual robot. Your robot should never hit an obstacle. Always ensure you have adequate clearance.

3. Bonus question 20%

Consider negative obstacles such as steps or drop offs. Monitor the floor plane and anything that drops lower than a few cm consider it an obstacle. Test you code in the lab, ensure that you are close enough to the robot to catch it if it miscalculates. Stay out of the field of view.

Evaluation:

I will arrange with every team to see a demo of the random walk behaviour.