CS245 – Robotics and Machine Learning
Lab 2

Individual Lab Exercise

In this part of the lab, you will experiment with optical sensors and motors. You will also report your findings.

Your task is to make your robot follow an arbitrary line on the floor. The line will be in black, about 1 inch thick and of arbitrary length (within reason). The surface on which the line is drawn will be much brighter than the line itself (i.e., white). Your robot must be able to follow the line from one end of the line to the other. Your robot must then turn around and follow the line back all the way to where it started.

Lab Report

Each student should describe, in detail, the process of designing the program to follow the line. In particular, please describe the following in your report:

- Any physical changes to your robot design for the tasks above
- Designs of your program in plain language
- Challenges you encountered and how you coped with them
- Observations of the performance of your robot's light sensor

Your report should be between 1 and 2 pages long, single-spaced, in Times New Roman 12 point font. In addition, turn in your line follower program, both on paper and electronically via email.

The grade for this lab will be determined according to the following:

- Lab exercise and program (70%)
- Lab report (30%)
    - Overall quality (10%)
    - Design process and challenges (5%)
    - The program (5%)
    - Sensor performance (10%)

Demonstrations and evaluations of your work for this lab will take place by September 21st. Lab reports are due on Monday, September 24th before the beginning of the class period. Late submissions will be accepted for 24 hours after the due date and time and will carry a penalty of 50% reduction in the lab grade. No assignments will be accepted after the expiry of the 24 hour extension period.