CMPUT 412: Experimental Mobile Robotics
Winter 2018
Competition #2
Date: February 15, 2018
Run, Robot Run
(lane-following race w/self-driving robot)

Objectives

- Revise the line following behaviour in Demo 3 in order for your robot to stay in a traffic lane just like a self-driving car
- Learn how to strategize and prepare for a robot competition

Procedure

A race track in the shape of a kidney-bean shaped loop will be laid in CSC 3-51 with solid white lines marking the lane. When travelling in the counterclockwise (CCW) direction, both inside and outside lines will be solid white. The width of the lane will be roughly 2 times the diameter of your Turtlebot robot. Your robot will be initially placed in full stop in the middle of the lane. The robot must stay in the lane while looping around the track. Orange pylons will be placed on either side of the lane at random locations to determine objectively if your robot remains in the lane.

Marking Scheme

Each robot will run the race three times and, each time, your robot will traverse the loop for two laps. Laps will be timed. You are allowed to use different code in different runs. The shortest of the three run times will be used as the final result of your robot, to determine the placement or ranking of your robot with respect to other teams. Each time your robot moves out of the lane, as determined by the "judges", five seconds will be added to the run-time as a penalty. If your robot loses the lane completely, then it is considered a failure and the run stops. The robot is disqualified if it is not able to run at all. The winning team will receive 100% of the marks and the second place 95%, (e,g, 100%, 95%, 90%, 85%, 80%) If a robot is disqualified, then the group will receive 0% of the marks. As in Competition 1, the marks for the competition are 10% of the term total, and the report 3%.