Dylan Lozon

ECE 101-02 MATLAB and C Programming

Mr. Watchorn

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Executive Summary

As you know, our warehouse drones have had problems avoiding obstacles that do not have static locations. (i.e., other drones, stray trash, people, etc.) I have attached a prototype script that will hopefully illuminate one way that our robots could determine proximity to obstacles at runtime.

Discussion

The function of this script is relatively simple. In its current state, it reads sensor data coming from a robot, and determines whether the robot is too close to an obstacle to be safe. It was decided that a robot that is exactly the at the minimum distance, it would be considered safe. This is because it is at the minimum distance, but not closer than that.

Currently, the robot’s status is only printed to the console, (lines 28 and 30 in RobotSensorLimit.m) but we could easily call a function to alter the behavior of the robot instead. I also took the liberty of adding optional user input for easy testing through the command line. (line 21)

Outcomes

The script worked as expected under each condition tested. The script was tested with incoming values that were: greater than, less than, and equal to the minimum safe distance.

Conclusions

Going forward, I expect that having robots continuously measure their surroundings rather than relying on odometry will significantly reduce crashes in the warehouse going forward.

Best,

Dylan