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Learning Module 8: Autonomous Vehicles/Navigation

Module 2: Follow the Gap

Week 1: Gap Selection and Control

Homework Question: You should roughly reiterate the activity, discuss how it was accomplished, demonstrate through images (if possible) the functionality, then briefly note any observations (including cases where it may not work so faithfully, or what is needed to work very well):

This week's task was to take everything from last week and finish up most of the calculation needed by the algorithm, specifically the gap center angle computation and the final heading angle computation. The gap center angle computation is a simple calculation considering we already return the maximum gap and the maximum length – take the middle index of the gap, and knowing the $\Delta\theta$ from the laserscan message, simply subtract the 0 angle index from the middle of the gap index and multiply by $\Delta\theta$. From there, the final heading angle is a relatively simple computation that requires tuning of weights. Since we aren't running the robot yet, we simply assumed these weights were one. From there, we assumed the goal was 20 odometry units in front of the robot. From there, it was a simple trigonometry problem to calculate the final angle as the goal angle + the gap angle.

Turtlebot Adventures Answers:

There were no questions this week in the adventure.