EECS 476: PS4

Matthew Swartwout

February 17, 2016

1 Overview

There are three main parts to this project: the action server, action client, and the lidar alarm. The general overview of the project is that the action client dispatches motion goals to the action server. Those goals are either to move in a square, or to halt and turn if a lidar alarm is detected. The lidar alarm monitors the robot's lidar and outputs the lidar alarm if obstacles are detected. The server receives these motion goals and commands the robot velocity accordingly. During the sequence of poses the server provides feedback with which pose is being executed, and whether or not it is complete.

2 Action Server

The action server is an implementation of the action_lib SimpleActionServer. It receives a pose_pathAction goal which consists of a nav_msgs Path, which is a collection of geometry_msgs StampedPoses. When a new goal is received the server callback loops through each pose in the path, calculating the yaw and distance to travel and then executing a spin and move.

3 Action Client

The action client is an implementation of the action_lib SimpleActionClient. It executes an infinite loop of sending path goals. By default this path is always to drive in a square. However, when a lidar alarm is detected the current goal is preempted with a goal to halt and turn slightly. Once the lidar alarm goes away the client resumes sending commands to drive in a square.

4 Lidar Alarm

This is purely a recycled lidar alarm from the previous assignments, with the intrinsic constants e.g scan width and the subscribers modified to function correctly with the new Gazebo lidar.