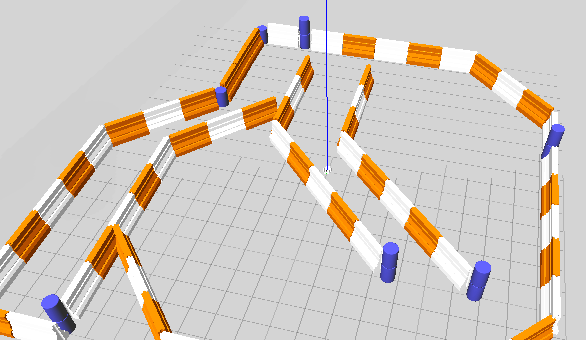
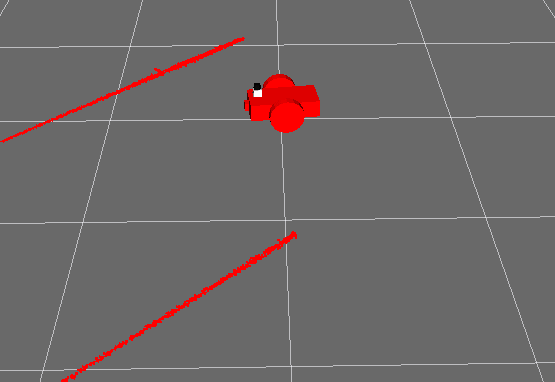
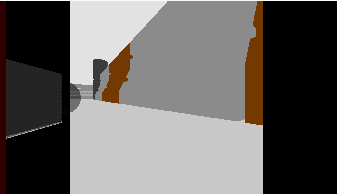
RoboND-Localization-Project

Report

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# 1. Abstract

# 2. Introduction

This report represents the Where AM I project, which simulate the localization problem of a small differential-wheels-driven robot with a camera and a lidar sensor on board in the simulation environment of Gazebo.

# 3. Background

The core of the Localization problem is to solve the question that where is the robot. Depending on the different situations, localization problems can be divided into three kind of localization problems: (1) local localization problem (position tracking), (2) global localization and the (3) kidnapped robot problem.

The goal of the local localization problem is to keep track of the position of the robot based on the information provided by different sorts of sensors. To get the accurate position of the robot, it needs to solve two major problems. The first one is the noise of the sensors, and the second one is the fusion of the data from different sensors. It is quite possible that the data from a noisy data yield the Gaussian Distribution. In the light of this statement, the noise of data can be measured by a mean and a standard deviation. The

and the main goal of the global localization problem is to find the true location of the robot relative to the ground-truth map.

# 4. Model Configuration

# 5. Results

# 6. Discussion

# 7. Future Work