UDACITY

< Return to "Robotics Software Engineer" in the classroom

DISCUSS ON STUDENT HUB

Where Am I?

REVIEW

CODE REVIEW

HISTORY

Meets Specifications

Dear student.

I hope you enjoyed this first project on SLAM. It is a project to get your feet wet with what localization is.
You also got familiar with a structure of a package, how to structure one and create launch files and also how to tweak urdf file to creat your own custom robots.
Future projects will build on that knowledge

Extra Material

Intreresting Playlist on Localization and Mapping
Interesting Example of simple localization. Must See
Monte Carlo Simulation. General Concepts
Adaptive Monte Carlo Localization
Monte Carlo Localization for Kidnapped Robot Problem
Merging Odometry & IMU data for Robot Localization

Basic Requirements

Student submited all required files:

- **ROS Package containing AMCL, teleop, robot, world and map files**
- **Screenshot(s) of localized robot in RViz**

Simulation Setup

Student's simulation world and robot could properly load in Gazebo.

Student's simulation setup should have the appropriate number of landmarks or geometric features to perform localization.

Localization Setup

Student's launch file contains all required nodes:
Map Server node `map_server`
AMCL node `amcl`
Move Base node `move_base`
The student's program should be able to launch without errors

Student filled required parameters for AMCL and move_base in the launch file and the config file

- ✔ AMCL Parameters are filled
- ✔ move_base parameters are filled

If you have some time you will find the following links very useful to expand your knowledge on amcl

External Material

- ROS Navigation tuning guide
- set start position of robot within amcl
- How to Tune Navigational Parameters Using a Graphical Tool?
- official AMCL documentation
- How can I disperse amcl particles in specific area?

Localization Performance

Student's robot could quickly localize itself after being tele-operated in the student's world, or given nav_goal target.

- ✔ Robot can localize while driving around

Hint

If you have problems navigating when setting the nav_goal, try to tune the inflation parameter (and read the tuning guide linked above)

DOWNLOAD PROJECT

RETURN TO PATH

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