530.707 Robot System Programming

3D Visual SLAM and Motion Planning using AR Drone

Weekly Progress Report #3

Date: Apr. 24, 2018

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1. This Week's Goals

1. Start working on motion planning package
2. Further improve reconstruction on Rviz

2. This Week's Progress

1. Follow the turtorials and learn how to use Moveit
2. Build AR Drone Moveit package using Moveit assistant
3. Build a node to publish point cloud data
4. Build a node to subscribe the point cloud data and import it as octomap into the Moveit Rviz
5. Can do some simple path planning

3. Changes in Project Scope/Goals

This week we focus on Moveit package, the progress goes as what we expected. There's no change currently.

4. Lessons Learned

1. How to build the Moveit package using the Moveit assistant function
2. Understand the basic knowledges of Moveit that the turtorials teach
3. Apply the 3D percetion/configuration on Moveit
4. Understand the concept of octomap and how it works for motion planning

5. Next Week's Goals

1. Improve motion planning package
2. Test the packages on the AR Drone

Schedule:

Items	Start Date	End date
Install necessary packages in ROS Kinetic	March 27	March 28
Convert the LSD SLAM from rosbuild+Indigo to catkin+Kinetic	March 28	April 4
Be able to implement LSD-SLAM under ROS Kinetic on our own laptop independently with sample data as input	April 4	April 11
Communicate with AR Drone and get the image data	April 11	April 13
Tesing the LSD SLAM on the AR Drone	April 13	April 15
Path planning package	April 15	April 30
Test LSD SLAM & path planning on AR Drone	May 1	
Wrinting final report and making poster	May 1	