

DD2419 prob20

Progress report

Group: 3

Week #: 7

Date: 16/2 2020

Person X: Instructions

Progress/Activities this week

- Use a bullet list to tell what you did this week.
- Be as concrete as possible. Use images if it helps. Quantify when possible, .e.g. can recognize object BlaBla 90% of the time and the rest only occasionally.
- This is the record of what you are doing in the course.
- For most people, this list would have one or two bullets, not more. This is not a contest about who can get the longest list. If your list is very long, chances are that you are reporting too small things.

Deviations from planned progress/activities and how to deal with it

- Here you mention if things did not go as planned for some reason and reflect on why and what to do.
- This might be empty, but typically only during the first few weeks

Decisions/plans

- What do you plan to do until the next week. Will be a shortlist typically.
- Make it concrete and with measurable goals as far as possible.
- Are you working on something that is not needed until many week into the future? You should break it down into smaller pieces that you can test and show others to sharpen the specification for what is actually needed.

Time spent

- How many hours did you spend this week?
- How many hours did you spend in total so far on the project?

Person 1: Andrej Wilczek

Progress/Activities this week

- Implemented part of positioning using aruco marker. Does not work perfectly yet, orientation is causing problems.
- Somewhat successfully implemented positioning of street sign but since we are still using color segmentation for detection it is very unstable but when the detection works the positioning seems to be correct.

Deviations from planned progress/activities and how to deal with it

- Group members changed this week. The transition was seamless.

Decisions/plans

- Continue working on milestone 2 and improve the performance of the nodes implemented this week. Implement better object detection.
<http://wiki.ros.org/Robots/TIAGo/Tutorials/HomographyEstimation>

Time spent

- This week: 10 h
- Total: 34 h

Person 2: Robert Berggren

Progress/Activities this week

- Milestone 2.1, the drone can follow an ArUco marker quite good when we leave out orientation, if orientation is to be followed then it randomly flips 180 degrees.
- Looked up/discussed why base_link doesn't spawn on Odom.

Deviations from planned progress/activities and how to deal with it

- Making the drone follow an ArUco marker showed to be more time consuming than planned due to many details being looked over and bugs.

Decisions/plans

- Continue to try to make the drone follow with both position and orientation.
- If following the marker with orientation doesn't work out within a few days then put that on hold and maybe help other members in the team.

Time spent

- This week: 21 h
- Total: 35 h

Person 3: Sumod Nandanwar

Progress/Activities this week

- Completed and Passed the flight camp assignment.
- Worked on some of the parts of Milestone 1 such as Keyboard control and Waypoint mission.
- Researching how to replace color segmentation with deep learning for object detection.
- Currently Working on Milestone 2.2 checkpoint routine task.

Deviations from planned progress/activities and how to deal with it

- Cannot manage to meet-up at most of the team meetings due to different course structures, which is leading to delay in the practical simulation of the created nodes on the drone.

Decisions/plans

- Complete and test milestone 2.2 on the actual drone upcoming week.

Time spent

- 20hrs this week

Person 4: Ossian Krödel

Progress/Activities this week

- Joined this group and was briefed with their progress.
- Got started with path planning. RRT implementation is almost ready to be tested in simulation. Reading gates from json to obstacles works.

Deviations from planned progress/activities and how to deal with it

- The change of group was a big deviation from what is planned.
- Wanted to try the path planning in simulation. Continued work will get this done early next week.

Decisions/plans

- Continue to work on path planning. Involve another group member early next week if I am not able to get it running in a good way.

Time spent

- This week: 16 h
- Total: 33

Overall system progress

Our system can perform all points in milestone 1.

The drone can now follow the aruco marker but not with correct orientation. Provided good object detection and correct calculation of projected size we can position the stop sign in the map.

Regarding the ArUco markers we can spot them and follow them using only position and hardcoding yaw (to 0) quite good but incorporating orientation makes the drone spin somewhat uncontrollably. Maybe introducing max movement and orientation to the command being published could help this.