

Laavanye Bahl

Team D: CuBi

Teammates:

Jorge Anton, Paulo Camasmie, Changshen Shen, Nithin
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ILR06

September 12, 2019

Individual Progress

The main focus for this review was to catch up with what we had completed last semester as a group and plan ahead. Major changes were made as a team for project management. I was assigned the duty to properly version and document the code on Github, which was messy due to haphazard coding practices in the last few days of the last semester, before the final demonstration. Therefore, I suggested some changes in the current practices for writing code, reviews, merging and documentation, and prepared some guidelines so that people can collaborate more efficiently this semester.

Secondly, I performed the code cleanup for my modules (mainly vision) from the last semester and updated its documentation for running the various features of the module.

This PR was much more focused on team work and discussions rather than individual work.

Challenges

Individual challenges:

No individual challenges as such for this ILR as we are still deciding on the individual task distribution for this semester. But considering the modules I worked on during last semester, obstacle detection and avoidance has to be introduced in the perception or/ and SLAM subsystems and integrated with other modules for real-time operation, which seems challenging.

Team challenges:

Key challenges and lessons from Spring semester:

- Working together more effectively saves tremendous amount of time for integration.
- Better collaboration means better learning by all team members, better results and a better environment for the whole team.
- Utilizing Git branches and discuss before pushing code onto the robot
- No over-commitment.
- Reach a point where you can integrate everything as soon as possible to allow early and constant validation.

The team had to retrospect about the last semester and take some major decisions about project management, SLAM and motion planning.

Teamwork

For this PR, we had a lot of meetings and discussions to take collective decisions about this semester. We discussed about the good things for each subsystem, the upcoming changes,

schedule, risks and most importantly project management. We switched to an open source tool called Notion to do various tasks on a single platform - task planning, scheduling, calendars, meetings, documents, work logs, communication, risk management and work division. Fig. 1 shows an example snapshot of our tasks page.

Rather than interacting with others individually for sub tasks, this time the interaction was mostly with everyone together for team collective decisions.

Cubi Tasks

The screenshot shows a table with columns for Task, Team Div..., Project, Due Date, Status, Assign, # PR, # Hours, and Links. The tasks are listed with their respective categories, due dates, and assigned team members.

Task	Team Div...	Project	Due Date	Status	Assign	# PR	# Hours	Links
Project Management Review	Coursework		Sep 04, 2019 3:44	Done		7		
General Planning	PM		Sep 05, 2019	Done	Jorge Anton	7		
Lab cleanup	Coursework		Sep 09, 2019	Done	Jorge Anton, Paulo Carr	7		
Define Software Interface	SE-General		Sep 09, 2019	Done	Laavanye Bahl, Jorge Anton	7		
Freeze and clean up git documentation	SE-General		Sep 10, 2019	Done	Laavanye Bahl	7		https://github.c...
Take dimensions CuBi and Caster for attachment	Mobility		Sep 10, 2019 2:00	Done	Paulo Camasmie			
Controls Issues from Last Semester	Controls		Sep 11, 2019	To Do	Jorge Anton	7		
Dropping Issues from last Semester	Planning		Sep 11, 2019	To Do	Jorge Anton	7		
Localization Issues from Last Semester	State Estimation		Sep 11, 2019	To Do	Jorge Anton	7		
Simple 2D Lidar SLAM	State Estimation		Sep 11, 2019	Done	Changsheng Shen	7		2dsla...
ILR 06	Coursework		Sep 12, 2019	Done	Jorge Anton, Paulo Carr	7		
Task 1 PR #7	Coursework		Sep 13, 2019	Done	Jorge Anton	7		
clean the mobility controls code	SE-General		Sep 13, 2019	To Do	Jorge Anton			
Prepare for meeting	Other		Sep 14, 2019	To Do	Jorge Anton, Paulo Carr			
Add tickets to notion	PM		Sep 15, 2019	To Do	Jorge Anton, Nithin Meg	7		
Create structure/code framework which resemble	SE-General		Sep 15, 2019	To Do				
Consider Transitioning from Behavior tree to stat	SE-General		Sep 16, 2019	To Do	Jorge Anton	7		
Acceptance test for master merge	GIT		Sep 16, 2019	Not Started				
Task 2: Project Test Plan	Coursework		Sep 18, 2019	To Do	Jorge Anton, Paulo Carr			
Copy of Lab cleanup	Coursework		Sep 23, 2019	Not Started	Jorge Anton, Paulo Carr			
Task 3: PR #8	Coursework		Sep 25, 2019	Not Started	Jorge Anton, Paulo Carr			
ILR 07	Coursework		Sep 26, 2019	Not Started	Jorge Anton, Paulo Carr			

Fig 1. Snapshot of task planning on Notion

Future Work

Individual plans:

The exact subdivision of tasks has not been finalized yet, but I will be working broadly on the research and implementation of SLAM and obstacle detection.

Team plans:

As a team we will be meeting over the weekend to finalize individual tasks and take some major decisions about SLAM, exploration and obstacle detection strategies, number of objects we can pick at a time, operation time reduction and changes in the current project requirements.