

EE 491 Weekly Report

May15-27

Week 5

9/28/14 - 10/05/14

Advisors: Dr. Jones, Dr. Elia

Team Members:

Alberto Di Martino * Team Co-Web *
Dylan Gransee * Webmaster *
Robert Larsen * Team Leader *
Ian McInerney * Team Key Concept Holder *
Aaron Pederson * Team Communications *
Rohit Zambre * Team Secretary *
Fengxing Zhu * Team Comm. Co-leader *

Work Hour Totals:

Team Member	Weekly Hours	Running Total
Aaron	9	32
Alberto	8.5	23.00
Dylan	9.5	34.50
Fengxing	4.5	22.00
Ian	8.5	27.00
Robert	13	36.50
Rohit	3	17.50

Weekly Summary

It is now confirmed that Eris is working and will be able to be demonstrated.

Getting closer to having a testable 2-d pendulum system.

Pendulum model now complete and awaiting completion of model

Pending Issues:

1. Need a way to TEST and RECORD data from both the robot functions and the quad.
2. We have been using the complicated GUI from last year's Sr. Design team but we do know where to modify to test.
 - a. Otherwise we would have to locate the other programs(already looked, very messy and poorly documented)
 - b. We already have documentation on the GUI.
3. Getting Simulink model working and ready to use.
4. Still very unsure which direction to go for the transmitting system. Do we start from scratch so we have a better understanding or do we use the existing GUI complex system which we have no idea how it works.

Next week goals:

1. Finish getting Pendulum system to run and begin testing
2. Finalize a testing system which records data.
3. If possible, use matlab to plot data and use that as a documentation visualization.

Meeting Notes:

10/02/14 -

Author: Dylan Gransee

Duration: 1 hr

Members Present: All

Advisors Present: Jones, Paul, Matt

Discussed current errors being faced to run the omnibot:

- Check root permissions on omnibot pc
- Need to make a new c file to check if the xbox controller values can be read.
- Overall learn the entire system better because it will help debugging
- Take the previous code and use it for making a new platform

PID controller should be easily modifiable for anyone down the line

- non-functional requirement

Think of a better name for the quad + ground robot system for the design document

Each task should have a Google doc with full documentation

- The project tasks document should link to these description documents
- When completed, this documentation should be updated
- It helps for future errors, because

Quad copter demo

- Paul will fix the broken ESC motor on the demo quad copter
- Possibly have one person from each team present to gain experience

Send out a quick summary every Wednesday

- Doesn't have to be as complete as the WSR, but it helps to prepare everyone for the Thursday meeting

Test the mixing matrix

- Testing needs to be done soon

Look into TI fuel gauge for batteries

- Aaron and Ravi

Note: email support team for kryten (Low priority)

- First goal is to get Eris going, but the support team at Korebot might be able to help with Kryten
- Find a gimbal for the 2-d system
- Find one that can do sensing and actuation at the bottom
- Twisting is a big thing

Most importantly, take extremely good meeting notes

- We are going to start taking more detailed meeting notes so that things don't get lost for long periods of time

10/05/14 –

Duration: 1.5

Members Present: All

Purpose and Goals:

- Communicate with team members on achievements, goals, problems and pending issues of previous week.
- Work on Eris, Mixing matrix, Simulink modeling and any other uncompleted tasks.

Achievements:

- We decided we need a way to test both the robot and quad control before we can move any further.

Meeting Minutes:

Author: Rohit

Project plan turned out to be good.

Hosting of website: Need to use ece resources.

Updates from team members:

- Robert and Dylan: Wrote a C program to read from the Xbox controller. Reads the buttons that are being pressed.
- Aaron: Found the k-value variables for the PID. We know where the values should be put in
- Ian: Was working on continuous time model of the pendulum. Now, has to make discrete time model first to see how it balances then.
- Feng: Project plan help with controller stuff. Ian and Feng met with Matt and Paul Friday afternoon to understand the parameters of an inverted pendulum. Played around with Simulink.
- Aaron: Looked through the test code. Made some progress with manipulating the matrix but not a lot of success. Still need to work on finding the right matrix to manipulate it.

Action Items

- Make system-level diagram for how the controller works.

- Need to write additional test scripts
- Need to make discrete time model for the pendulum
- Need to make a signal flow from the camera system to the quadcopter to see where the values are being manipulated.