EE 491 Weekly Report May15-27 Week 9 (10/27/14/ – 11/02/14)

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	10.50	82.00
Alberto	8.50	74.50
Dylan	17.00	81.00
Fengxing	8.50	54.00
Ian	10.00	68.50
Robert	10.50	79.00
Rohit	8.00	57.50

Weekly Summary

It has been a week of little many bugs and issues that have come up. We did make a few steps in the right direction though. We fixed the major jumping bug in the motors. Much of our time was spent on the design document in the beginning of the week as well.

Pending Issues:

1. This week we should try to get done with the characterization of the moment of inertia
2. Characterization of the motors.
3. Need to characterize PID values that are being generated
4. Should put log files describing jump behavior on git with description in readme
5. Get PWM out from Eris
6. Get motor constants
7. Get the universal joint that fixes yaw rotation
8. Fill out the doodle poll, if you haven't filled it out yet
9. Fill out the timesheet by filling out the timesheet with the notes
10. Try to be more punctual to meetings, especially to the Thursday meeting.

Next week goals:

Aaron:

- Look at log files to look for error occurrences
- Universal Joint Implementation(if purchased by advisers)

Alberto:

- Look at log files to look for error occurrences

Dylan:

- Will work with Robert to work on the PWM stuff

Fengxing:

- Will talk to Matt about the model for the quad copter

Ian:

- Will go through drop data to look for error occurrences
- Will work with Feng on moment of inertia measurements
- Will work with MicroCART on quad characterization

Robert:

- Will continue on working PWM

Rohit:

- Will be working with CSG on Monday

Individual Contributions:

Aaron:

- Advisor Meeting(1 hr), Demonstrated Problems(.5 hr)
- Testing Pendulum: raw drop testing, troubleshooting jumping issues(fixed some) (4 hr)
- Group Meeting (1 hr)
- Motor powered drop tests(2 hr)
- Organized and uploaded data in git and wrote WSR(2 hr)

Alberto:

- Advisor Meeting(1 hr), Demonstrated Problems(.5 hr)
- Testing Pendulum: raw drop testing, troubleshooting jumping issues(fixed some) (4 hr)
- Group Meeting (1 hr)
- Motor powered drop tests(2 hr)

Dylan:

- Demos (1.5 hr)
- Teaching Microcart the omnibot demo (1 hr)
- Design Document (2 hr)
- Advisor meeting

- Website (2 hr)
- adding VRPN support (2 hr)
- Working with Robert on PWMs (1 hr)
- Testing VRPN (1 hr.)
- Group meeting (.5 hr)
- trying to get PWM output on Eris (4.5 hr)

Fengxing:

- Design document(2.5 hr)
- Advisor meeting (.5 hr)
- Paul's paper and searched some information related to his paper (2 hr)
- Meeting (3.5 hr)

Ian:

- Design Document (3hr)
- Advisor meeting + Discussed PID implementation with Robert (2 hr)
- Met with Ravi from Microcart to discuss an electrical circuit design (2 hr)
- Team meeting + data analysis from drop tests + GIT organization (2 hr)

Robert:

- Design document + looking more at linuxCNC (2.5 hr)
- Advisor meeting + Discussing PID implementation with Ian (2 hr)
- Getting desired PWM output from Eris (6 hr)

Rohit:

- Design Document (3.5 hr)
- Advisor Meeting (1 hr)
- Discussed gimbal possible implementation (0.5 hr)
- Team meeting (1.5 hr)
- Learned about Eris's PWM controller from Robert (1.5 hr)

Total Contributions for the project:

Meeting Notes:

10/30/2014

Duration: - 1 hrs **Members Present: All** **Advisers Present: Dr. Elia, Dr. Jones, Paul Uhing**

Note Taker: Rohit Zambre

Should not neglect the systematic approach to identifying the different components of software and hardware to promote
Measure parameters to define the system. Compare the measured system to the model system.

Should now focus on characterizing the system to understand how the system should work.
Ian
-- Modified the model of the 1-d system
-- How the PID values are being generated is still a confusion
Some issues with scaling
Using Matt's motor constants which are not we are using
Instead of
Send PPM --> Measure motor speed --> Compute thrust
do this:
Send PPM --> Compute thrust
This week we should try to get done with the characterization of the moment of inertia
and also the characterization of the motors. Need to characterize PID values that are being generated
Dylan
-- Made a more detailed manual for Eris.
-- Tried to get the camera system working with the Eris. Used libraries and tried to install them.
-- Need to first compile libraries.
-- Send out readme to Dr. Jones to get help
-- Work with IP Aliases to connect the local area network.
Robert
-- Emailed mesa
-- Got some vhdl files from mesa
-- Wasn't able to figure out how to use certain commands
-- Should get someone else working on the project to understand
-- Possible approaches
1) Build one module ourselves
2) Work with mesa - Ask them how to a PWM output from an I/O pin
3) Work with the xp machine
Rohit
-- Talked about Camera system issues
-- Need to hook up the camera system on the local network.
-- Try creating the executable file for LabVIEW and try using that
Discrepancies in the constants that are being used. Paul's VS practical
How significant is the 150ms delay
-- Need to verify its significance through practical experiments
Jolting issues - what is the exact cause?
-- Possible noise issues

Meeting Notes:

11/02/2014

Duration: - 45 min **Members Present: All** **Advisers Present: Paul Uhing**

Note Taker: Rohit Zambre

Individual reports:

Rohit
-- Tried to cooperate with CSG to work on the network and installation issues
Will be working with CSG on Monday
-- Prepared the Design Document.

Feng
-- Tried to decipher Paul's paper (2 hours)
-- Will discuss the paper with Paul today
-- Will take measurements with Ian on Monday or Tuesday
-- Talked to Elia regarding the control theory of the quad
-- Will talk to Matt about the model for the quadcopter

Aaron
-- Worked with Alberto on drop tests
-- Putting data on git
-- Fixed a sign issue with a variable which might be causing an overflow: Doesn't jump as much
-- System still goes out of control when starting off from a far end. Possibly due to delay in connection
- Look at log files to look for error occurences

Dylan
- Went to the demo
- During the microCART meeting, showed how to do the omnibot demo
- Worked on website. One page left to be done
- Got the VRPN libraries (to communicate with the camera system) to compile
- Will work with Robert to work on the PWM stuff

Ian
- Worked on the Design Document
- Worked with Robert on PWM issues for Eris
- Worked with Ravi on circuit design for MicroCART
- Will go through drop data to look for error occurences
- Will work with Feng on moment of inertia measurements
- Will work with MicroCART on quad characterization

Robert
- Worked on looking throuh linux CNC
- Worked on softEMC, the program that is responsible for PWM outputs.
Will continue on working PWM

Next items
-- Should put log files descriping jump behaviour on git with description in readme
-- Get PWM out from Eris
-- Get motor constants
-- Get the universal joint that fixes yaw rotation

-- Fill out the doodle poll, if you haven't filled it out yet
-- Fill out the timesheet by filling out the timesheet with the notes
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