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Team B
Teammates: Stephanie Chen, Ian Hartwig, Ian Rosado
ILR02
Feb. 12, 2015

Individual Progress
This week I worked on a matlab gui for control/reading data from the motor lab which we did this week. seen in figure 2. Additionally I continued to work on a matlab simulation of our robots motion so that I can prototype the control algorithm we will use for the final robot.

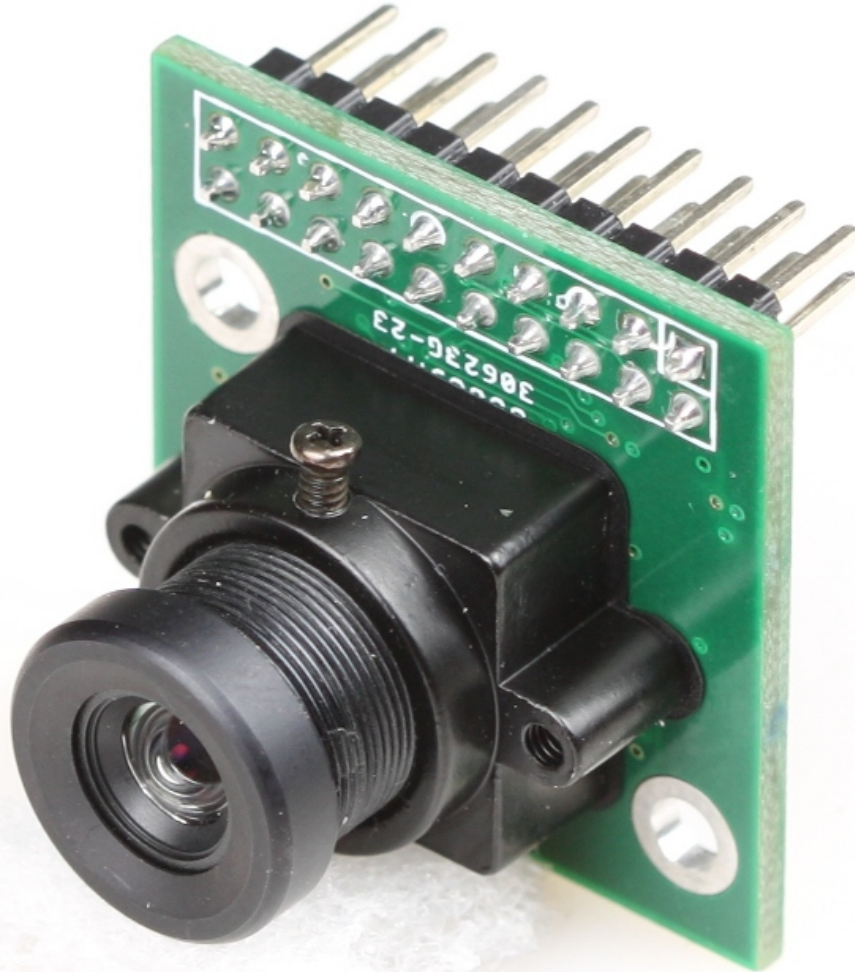Additionally I was able to order an arduino camera seen in figure 1

Figure 1: the OV5642_module camera we receive and plan to use for localization of our robot on the window.
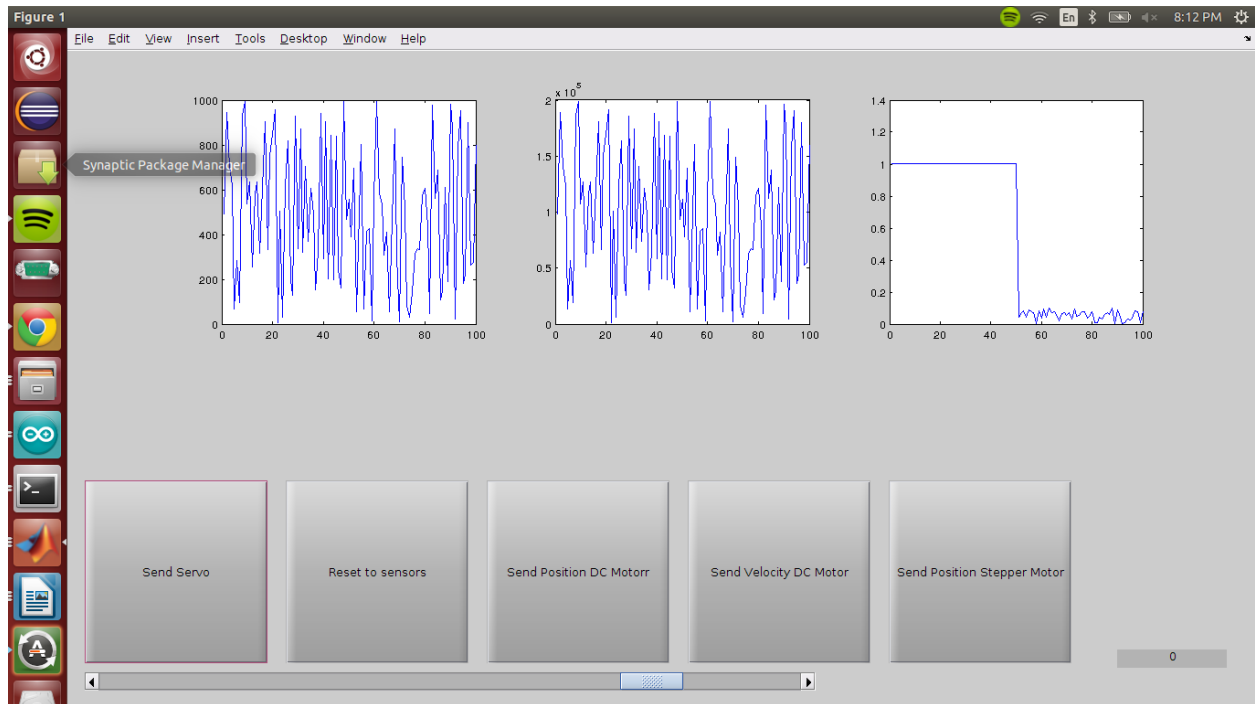
Figure 2: a picture of the gui that we created for reading the 3 sensors and controlling the motors from a computer.

Challenges and Issues

We had a lot of problems setting up the motor lab this week (seen in figure 3). When we were first doing the project we thought that we could just use 3 sensors to control 3 different motors with plots of the sensor data. It turns out the lab was a bit more complicated, so it took us longer to implement.
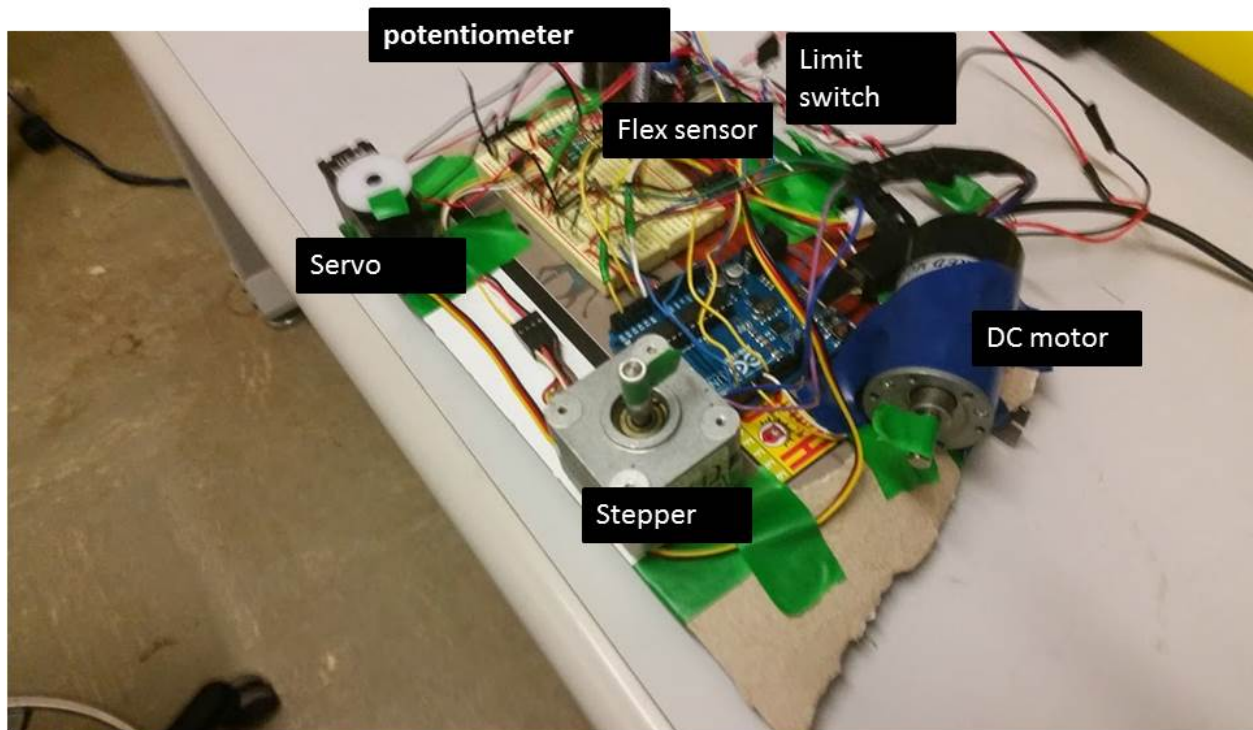
Figure 3 the motor lab setup that we built.

In terms of the final robot design we are still working on ways to get and keep the total systems weight down. Additionally we still need to develop a gripper design which is strong enough to serve our purposes.

I still need to figure out how to interface with the camera unit which we received and how to control the robot using the stmf4 board. As a back up we will be using an arduino mega or cortex m0.

Teammate Coordination
I worked with Ian H on the motor lab. We were able to build a attach our three sensors (a bend sensor, flex sensor, and potentiometer) to the three motors we used (a servo, a DC motor, and a stepper motor).   I focused on adding the ability to override the sensors by sending commands from a gui.

Additionally I worked with Ian H on ways to reduce the number of motors in the robot . We determined that it would be possible to move both of the rotational joins of our robot with a single motor in the center of our arm. This could have the effect of cutting down the required

output torque of the motor by 4 since its weight would be in the center of the robot and we only need 1 robot instead of 2. We found that the FIRST robotics Bag motor with a vex planetary gearbox (a 1000:1) reduction could more then serve our purposes.

Plans for Following Week
For next week we plan to have the first version of our cad model done. I plan to finish my matlab simulation of the robots controls. Additionally I plan to have a prototype of the visual servoing program working on an arduino.

We also would like to start building a prototype of our gripper and order all of the parts for the superstructure of our arm.