Lab 3 Report
CSE 190
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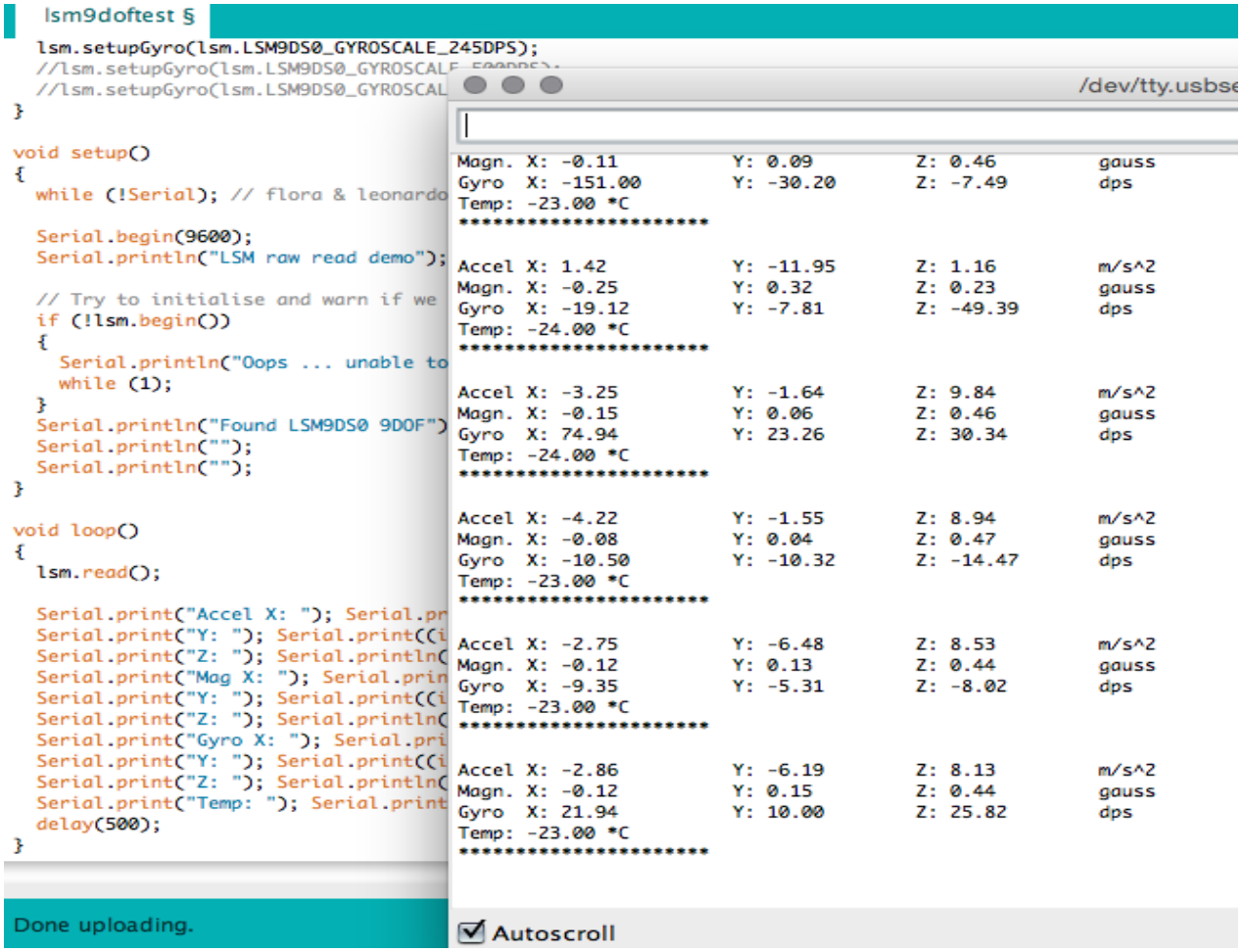
For up and down with the gimbal we found a value of 2.86KΩ resistor gave us the largest range of values from 300 - 1023. For left and right we found the value of 2.31KΩ gave us the largest range from 150 to 1023.

left and right : 2.31K Ohms = > 150-1023
up and down : 2.86K Ohms => 300-1023

Some problems that we had was that it was really hard for us to read the output of the IMU. Also trying to make sense out of the sensor reading was kind of confusing. Another problem we faced was trying to maximize the gimbel readings. We could not get the minimum value to be zero. But we tried to get the maximum range.

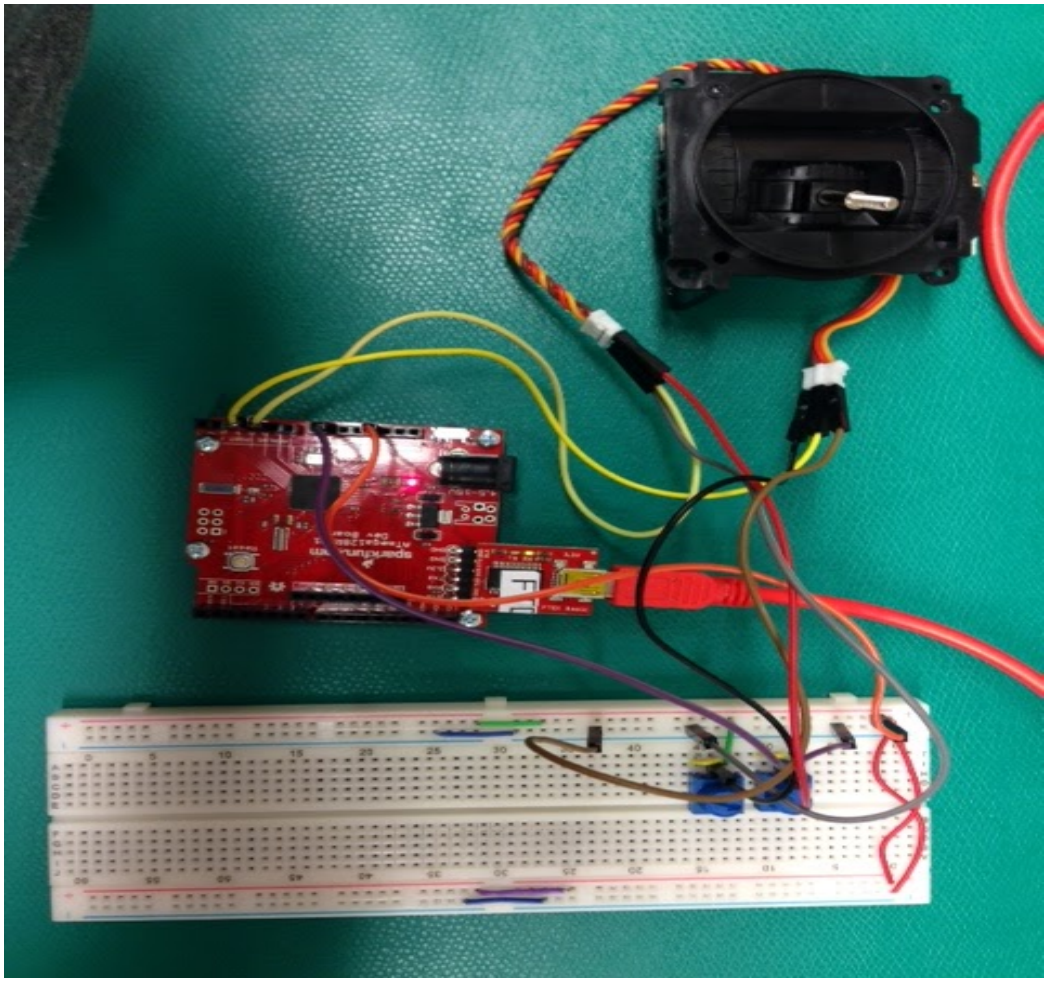
* More Data/Pictures on next pages

IMU



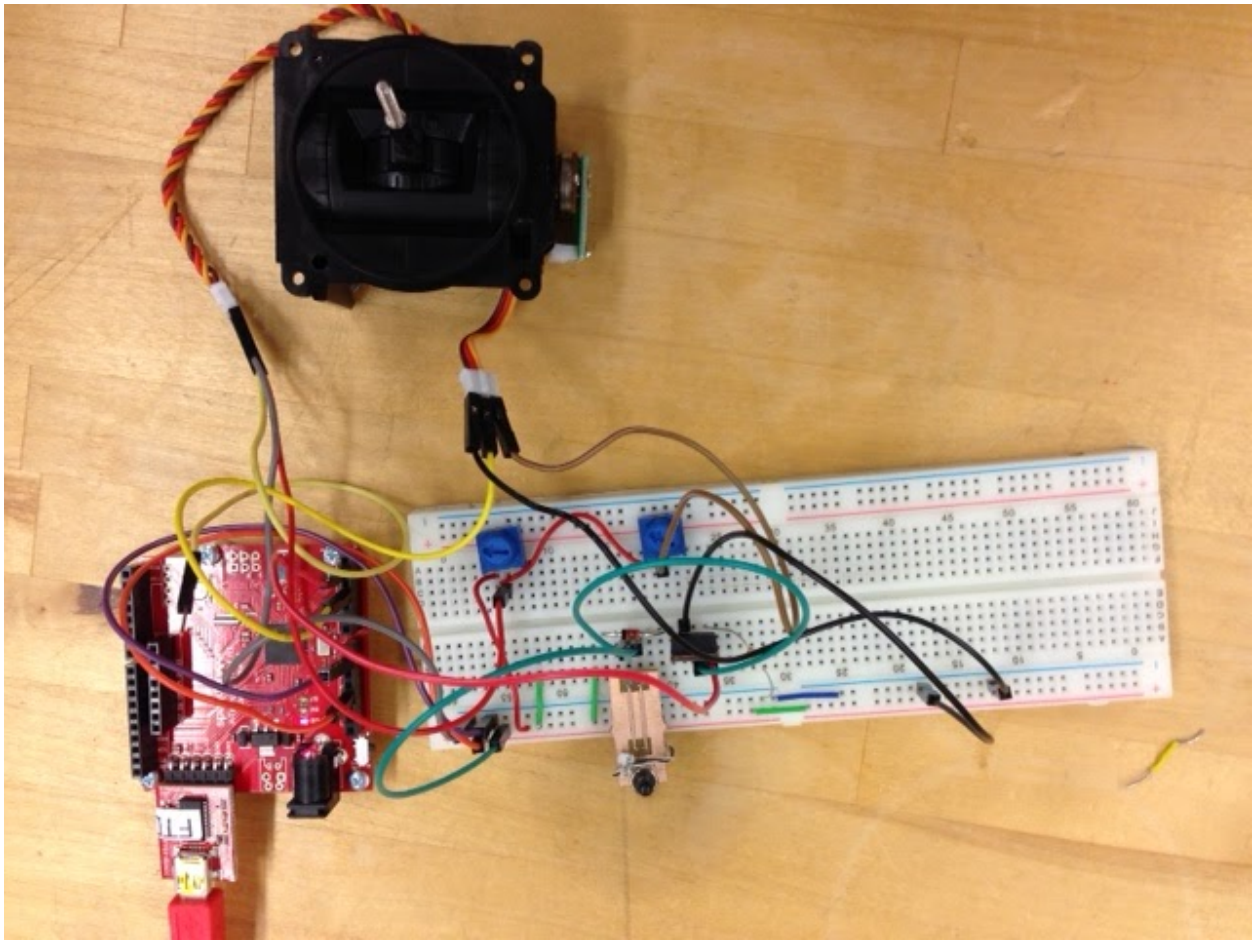
We gained whole bunch of data from the IMU chip. We first didn't know what the raw data from the IMU chip meant so we ran sensor value example code from the Sparkfun.

Gimbal Setup



We set up the gimbal in series with the potentiometer. The change in the gimbal is read by the analog pins and turned into digital data by the ADC on the board.

Motor Setup



We couldn’t get the full range of the gimbal. However, we were able to use the gimbal to control speed of the motor. We the board to read the analog from the gimbel and outputted the PWM to the MOSFET to control the motor.