CC3501 Weekly Report

**Group number:** 2 **Team members:** Ethan Waters, Lachlan Pryce  
**Week number:** 11

**Progress this week**

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Who did it?** | **What were the outcomes?** | **What did you learn?** |
| Implement sensor fusion code | Lachlan | * Wrote driver for MPU9250 IMU (test IMU) with SPI protocol. * Driver returned accel and gyro readings. Magnetometer didn’t work. * Developed code to calibrate gyroscope and determine offset values. * Passed gyro and accel data into sensor fusion algorithm. * Currently roll, pitch and yaw outputs experience drift | * SPI communication implementation with hardware * Importance of calibrating gyroscope * Yaw readings commonly drift, placing importance on magnetometer calibration and sensor fusion algorithms. |
| Complete 2D vision movement code | fix bugs | Ethan | * Create shared pointers to handlers that can only have a single instance * Command line interface to update and change parameters of image detection as needed during detection * Updated driver for PiCameraDetection * Updated driver for socket communication * Created test script and .bat file for receiving socket communication |  |

**Overall project tracking:** [fill this in at the beginning of the project and update weekly based on actual progress]

|  |  |
| --- | --- |
| **Week number** | **Milestones** |
| 1 | Confirm project topic and begin |
| 2 |  |
| 3 | Arm can move with an input from a socket. The input is an automated test script executed by a client to mimic the embedded system output |
| 4 | Select components & review datasheets |
| 5 | Begin schematic |
| 6 | Complete Schematic, forward to Bronson for feedback. |
| 7 | Submit complete schematic to Bronson for feedback. Complete PCB design for feedback, |
| 8 | Submit board for manufacture. |
| 9 |  |
| LR | Work on vision based movement with PI while waiting for embedded systems. Work on sensor calibration and Kalman filter code. |
|  |  |
| 11 |  |
| 12 |  |
| 13 | Demo day during Friday lab |