CC3501 Weekly Report

**Group number:** 2 **Team members:** Ethan Waters, Lachlan Pryce  
**Week number:** 10

**Progress this week**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Task** | **Who did it?** | **What were the outcomes?** | **Who did the peer review?** | **What did you learn?** |
| Develop driver for LSM9DS1 sensor initialisation, configuration and subsequent reading of accel, gyro and mag data | Lachlan | Basic driver created for interfacing with RP2040 |  | Configuring SPI communication protocol |
| Peer meeting to confirm software design | Lachlan & Ethan | Identified required drivers. Better understanding of implementing each component and overall software structure. | Lachlan & Ethan | Software will comprise of small drivers with strict functionality. Drivers should be easily implemented into main code for ease of reading and debugging. See Diagram below. |
| Develop driver for socket communication in C++ | Ethan | Easy interface to send data to server controller Robot Arm. Can be used for embedded system or vision-based movement system. |  |  |
| Develop driver for threshold-based object detection. | Ethan | Interface to easily identify coordinates of different objects. Uses both HSV and RGB thresholding. Can load and save a calibration file rather than always having a visual display to reduce computational load. This driver includes functions to calculate angle change between limbs. |  |  |
| Write main for vision-based movement | Ethan | Work in progress however main body of code is there. |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**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 |

