EE 492 Weekly Report (DEC15-19)

Week 12

Project Title: Efficient Measurement of Soil Microtopography to Aid the Verification of European Space Agency and NASA Satellite Observations of Soil Moisture

Advisors: Brian Hornbuckle, ISU Agronomy and ECpE; Josh Bertram, Collaborator Instructor

Client: Brian Hornbuckle, ISU Agronomy and ECpE

Members (roles): Brant Walsh (Key concept Holder, Team communication leader), Dillon McDowell (Team Webmaster), Yan Yao Chan (Team Leader)

Weekly Summary

The group received the power drill and started working on the buck converter circuits. The existing Kinect issue is also further examined. Furthermore, the group is to prepare for a required presentation for the course instructor in the week.

Meeting notes:

11/9 Group Meeting

Duration: 6 hours 30 minutes (Brant Walsh), 5 hours 30 minutes (Dillon McDowell), 4 hours 30 minutes (Yan Yao Chan)

Members Present: All

Purpose and Goals: To continue working on the Kinect data acquisition and to start working on the power source now that the power drill has been delivered.

Achievements: The power drill has been disassembled but the circuit boards has not been completed yet.

11/10 Group Meeting

Duration: 1 hour

Members Present: Brant Walsh, Dillon McDowell

Purpose and Goals: To work on the distance correction for the Kinect.

Achievements: The group members made progress but are still unable to fix the issue.

11/11 Group Meeting

Duration: 4 hours

Members Present: All

Purpose and Goals: To work on the presentation document, Odroid setup, Kinect distance correction and the simple switcher circuits.

Achievements: The simple switcher circuits are built and tested using a Breadboard. The Odroid and the Kinect are further tested and improved upon. More importantly, the group completed the presentation document along with any appropriate documentation.

11/12 Group Presentation

Duration: 25 minutes

Members Present: All

Purpose and Goals: To present the group's progress and project documentation.

Achievements: The course instructor provided feedback regarding the presentation and the design project.

11/12 Group Meeting with Collaborator Instructor

Duration: 30 minutes

Members Present: All

Purpose and Goals: To present the group's findings and progress on the project.

Achievements: The group discussed the development of the design project and received feedback on how to improve the existing system.

Pending issues

While the outputs for the simple switcher circuits have been close to expected, it is still not feasible. Furthermore, the Odroid software did not work correctly despite working the few days prior.

Plans for next week

To complete the simple switcher circuits and to work on the Odroid as well as the Kinect. Once the circuit has been completed, assembly is to be underway.

Individual Contributions for this week

Brant Walsh (12 hours 25 minutes) – Attended the meeting with the collaborator instructor. Worked on setting up the libfreenect driver and the Kinect scale calibration. Worked on the presentation document and the simple switcher circuits. Completed the group presentation for the course instructor.

Dillon McDowell (13 hours 25 minutes) – Attended the meeting with the collaborator instructor. Worked on the Kinect scale calibration. Worked on the presentation document and completed the group presentation for the course instructor.

Yan Yao Chan (16 hours 45 minutes) – Attended the meeting the collaborator instructor. Worked on the presentation document and the simple switcher circuits. Completed the weekly report and the group presentation for the course instructor.

Total contributions for the project

Brant Walsh (53 hours 5 minutes)

Dillon McDowell (47 hours 5 minutes)

Yan Yao Chan (48 hours 40 minutes)