EE/CprE/SE 491 WEEKLY REPORT 3

October 5, 2019 – October 18, 2019

Group number: 05

Project title: Vision Impaired Swim Aid

Client &/Advisor: Leland Harker

Team Members/Role: Carson Kneip, Paden Uphold, Nathan Mortenson, Timothy Steward,

Conor Albinger, and Jake Sieverding

○ **Weekly Summary**

We received the IR sensor that we ordered. Nathan, Timothy, and Carson got it set up and ready to test. When we went to the pool and tested we obtained good results and determined that this sensor is definitely a potential solution. We are currently waiting for the sonar sensor so that we can determine what sensor we like better. On to the next step of our device, we have started to determine what communication devices we want to use. Our plan is to start focusing on that next.

○ **Past week accomplishments**

- Carson Kneip: Made a rigged up connection with Nathan to test our IR sensor. Then, calibrated IR Thursday 10/10 with Timothy and Nathan.
- Paden Uphold: Tested to see if IR sensor would give data in water. Researched possible communication devices.
- Nathan Mortenson:Testing IR distance and calibration
- Timothy Steward: I helped setup the IR sensor and get software working to readout data from it. I helped test it outside the pool.
- Conor Albinger: Continued researching communication devices
- Jake Sieverding: Found communications device to for the swimmer to receive notification.

○ **Pending issues**

- Carson Kneip: Have been waiting on sonar sensor for about two weeks.
- Paden Uphold: IR does not detect when the swimmer is to side of the sensor but works when directly in front of the sensor.
- Nathan Mortenson: Need to look into different strokes and how IR responds
- Timothy Steward: Since it is necessary for the swimmer to be in motion while they are swimming, it is difficult to measure their distance from the edge. We need to find better methods for getting good data in determining if our sensors work well.

- Conor Albinger: None of the sensors work perfectly in our environment, so we need to figure out a way to better determine the swimmer's distance despite the sensor issues
- Jake Sieverding: IR sensor has a lot of hurdles to overcome to make work and the sonar sensor hasn't arrived.

○ **Individual contributions**

NAME	**Individual Contributions**	**Hours this week**	**HOURS cumulative**
Carson Kneip	Went to the pool Sunday 10/13 to test the new Sharp sensor and later in the week started to establish some communication devices.	8	18
Paden Uphold	Pool to test new Sharp sensor started looking into communication devices to order.	7	17
Nathan Mortenson	Research communication and IR testing	6	16
Timothy Steward	Got software for the IR sensor working Created at schedule spreadsheet showing the remaining time left	7.5	25.5
Conor Albinger	Researched communication devices	4	14
Jake Sieverding	Looked into communication devices for transmitting and receiving FM signal.	6	17

○ **Plans for the upcoming week**
- Carson Kneip: Order communication devices and reach out to vision impaired organization. (Iowa Education Services for the Vision Impaired)
- Paden Uphold: Get sonar sensor and testing with it. Get communication ordered and set up if it comes in. Reach out to Iowa Department for the Blind for vision impaired input.
- Nathan Mortenson: Test IR sensor with different swimming strokes and work on communication and Sonar.
- Timothy Steward: Reach out to Alliance for Disability Awareness club at Iowa State to see if they can put us in contact with any blind students on campus who we could talk about swimming with. See if I can find a way to put data with a video, track the swimmer in a video, to better help us analyze data.
- Conor Albinger: Help test the sensors at the pool and make more progress on our communication system

- Jake Sieverding: Hopefully receive sonar sensor to test then start developing code to accurately send a signal at the right distance.

Summary of weekly advisor meeting

We did not meet with our advisor during this time.