

EE/CprE/SE 491 WEEKLY REPORT 04

Oct 4th, 2024 – Oct 10th 2024

Group number: 25-34

Project title: Laser Scan Readings for Propeller Measurement

Client &/Advisor: Linden Propeller (Gary Linden) / Dr. Mani Mina

Team Members/Role

Name:	Role:
Alan Whitehead	Testing
Elias Colsch	Client interaction
Spencer Rudin	Schematic Design
Denny Dang	Individual Component Design

Past Week Accomplishments

Name	Past Contributions
Alan Whitehead	I started researching data fusion as a potential solution to getting over the cost hurdle. I've also been contacting James Hiese about his past research on this project to see what we can use. I've started going through my old 288 code to see what can be used for the proof of concept.
Elias Colsch	I kept researching different alternatives for lasers and IR sensors. Also received the IR sensor from ETG with the necessary adapter. Also helped with setting up a proof of concept.
Spencer Rudin	I researched lasers and how they interact with the devices being measured. Looked into alternative solutions to our current understanding of our overall design.
Denny Dang	I started research on alternative applications of distance measuring devices. Researched and looked into a laser from Keyence, coincidentally being our cheapest option for laser devices. I talked to an engineering representative from Keyence about our project and constraints. I started working on the programming and systems of our proof of concept using the IR sensor from the CPRE 288 Lab and an Arduino to communicate.

Weekly Summary:

This week we kept working on the proof of concept, primarily troubleshooting and testing the sensors we will work with. We also got updates from KEYENCE to set up a demo of their laser measurement system. We then provided updates to both Mani Mina and Gary Linden about our current progress.

Name	Individual Contributions	Hours this week	HOURS Cumulative
Alan Whitehead	Worked on getting the IR and Ultrasonic sensor set up. This includes troubleshooting, coding, and assembly of the Arduino.	6	16
Elias Colsch	Did some research about Arduino coding to get a refresher on how to work with an Arduino. Looked into overall user necessities and the most efficient ways to meet them. Helped with Arduino coding and finding equipment for KEYENCE meeting workstation.	6	18
Spencer Rudin	I helped troubleshoot Arduino code, went to the ME labs and found out that we have a HandyScan 3D available here for use(in both modeling and measurement), talked with the ME Additive Manufacturing about possible light-based sensor solutions.	5	14
Denny Dang	Trying to troubleshoot our problems with the Arduino and IR sensor for our proof of concept. Got in touch with Kyle from KEYENCE to set up a future meeting and demo with their laser technology. Planned out what	6	16

	equipment and workstation is needed.		
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Plans for the upcoming week

Name	Future Contributions
Alan Whitehead	Working on setting up the ultrasonic sensor and hopefully starting work on using multiple sensors for data fusion.
Elias Colsch	Working on proof of concept with the IR sensor. Will help find equipment for and set up the workstation for KEYENCE.
Spencer Rudin	.I will help work on Arduino for IR sensor, continue to look into IR sensor solutions with the team. Also possible to use the HandyScan 3D to confirm our findings from our proof of concept with the Arduino.
Denny Dang	Will set up the workstation for Kyle from KEYENCE to set up his demonstration of his products. Will also program proof of concept. Plan to help team members in their respective duties and future contributions.