EE / CprE / SE 492 – sdmay23-22

Ultrasonic Radar

Week 1 Report

Jan 16th – Feb 19th
Client & Faculty Advisor: Jiming Song

Team Members:

Kevin Czerwinski - Electrical Engineer
Derek Thomas - Computer Engineer
Ryan Foster - Electrical Engineer
Samuel Rosette - Electrical Engineer
Jack Riley - Electrical Engineer
Abubaker Abdelrahman - Electrical Engineer

Past Week (s) Accomplishments

- Phase array research
    - Investigated different methods to form the array to reach optimal area for the radar to detect
    - Researched the parts we bought to see how to implement it and how to test
    - Looking into different softwares that are compatible with our output so that I can display the radar results on LCD screen
- Purchased 10 smaller transducers from the ETG
    - Played around with them to test them out
- Met with advisor twice
    - Discussed the plan on the form of the phase array we will use to tackles this project
    - Talked about what he wants for requirements
        - Stationary transmitters and receivers in a line most probably, covering a window of +- 70 degrees
        - Being able to detect the objects size and shape if possible, also the presence of the object further away if possible

Pending Issues

- Figuring out the method in which we will receive the signals so that it can be multi-directional
- The best software to output the data read by the radar
    - Should be able to connect with the physical components and the ports so that it is readily available for output

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Derek Thomas	- Updated website - Contributed to the bi-weekly report - Attended meetings and figured out possible next steps to tackle phase array	3	12
Kevin Czerwinski	- Researched different implementations of phased array technology - Put in the order for the new transducers and helped in the testing - Attended meetings and assisted in brainstorming circuit ideas	3	12
Ryan Foster	- Testing of amplification circuitry (Input and Output) - Transducer testing	3	12
Samuel Rosette	- Researched for more accurate transducers - Assisted with the testing of the transducers	3	12
Jack Riley	- Researched shift registers - Made block diagram of full circuit - Researched better transducers	3	12
Abubaker Abdelrahman	- Attended this week and past weeks meetings - Researched for ideas to put on the circuit design	3	12

Plans for Coming Week
- Testing out the different components
- Look into what other parts we may need to purchase
- Start working on the software portion so the data can be read and analyzed