

EE/CprE/SE 491 WEEKLY REPORT 6

11/15/2019 – 11/22/2019

Group number: sdmay20-24

Project title: Wearable Cardiac Monitor

Client &/Advisor: Huang Cheng

Team Members/Role:

Andrew O'Brien - Software

Peyton Sher - Software

Ruiyu Sun - Hardware

Scott Beard - Hardware

Samantha Kimball - Communications

Vincent Lazzaro - Communications

Weekly Summary:

This past week, we were able to get the software and communication sides together to connect the bluetooth with the application. We wanted to make sure we were sending data over to the application and the application was able to receive it. From there, we started to work on getting the data into a real looking heart rate. This still needs fixed as there is a lot of noise in our system so our data is hard to comprehend at the moment.

Past Week Accomplishments:

Andrew O'Brien: I spent the past week improving the functionality of the application.

Peyton Sher: Worked on documentation and on app. Spent most of my time working on our presentation and finishing and editing the design doc to make it presentable to turn in. Got graphing on app working properly.

Ruiyu Sun: Prepare for the final presentation; meet with professor; edit design doc; do research on the problems in hardware part.

Scott Beard: Prepared for final presentation, met with professor, design doc, researched ECG gel for purchase, hardware research

Samantha Kimball: I helped with getting our code to connect to the application in order to send data over. I also worked on the design document and the final presentation which will be on December 9th. We also met up with our client/advisor to catch him up on our project and talk about the presentation.

Vincent Lazzaro: I worked with with our code to get out device to be able to read a signal from a phone to be able to tell what mode the app is so that it changes how to send data. I also got the arduino to read start reading data from the ECG to start seeing what are data looks like through the arduino and doing some processing with the data with the arduino to smooth out our reading we are seeing. Worked on our final presentation for the semester and final touches with our design doc.

Pending issues:

Andrew O'Brien: We need to ensure that the data we are getting is in the right format for the graphing portion of the application which will require some more testing.

Peyton Sher: Need to get some data coming in from arduino to test, but it is set up to do so.

Ruiyu Sun: Noise cancellation could consume more power if attached to the hardware part, mobile phones could be a choice. Based on the research, motion sensor can't really solve the noise problem. Need to find more possibilities.

Scott Beard: Looking into using phone as motion calibration device, testing ECG gel, new board for new IC

Samantha Kimball: There is a lot of noise in our data that the app is receiving so we need to work on eliminating the noise.

Vincent Lazzaro: Getting a good enough sampling rate for sampling the heart beat. Processing the data correctly to get rid of noise in the system and smooth out the signal.

Individual contributions:

Name	Contribution	Weekly Hours	Cumulative Hours
Andrew O'Brien	Design Doc, Bluetooth Connectivity with Application	10	48
Peyton Sher	Design doc, Presentation, and app	12	45
Ruiyu Sun	Design doc, presentation, hardware research	10	44
Scott Beard	Design doc, presentation, hardware research, ECG gel	10	43
Samantha Kimball	Help get our program working with the application, design document, presentation	12	48
Vincent Lazzaro	Getting our program to work correct in reading and sending data. Design doc. Presentation	20	60

Plans for the upcoming week:

Andrew O'Brien: This upcoming week we will be preparing for our final presentation.

Peyton Sher: Finish up getting app to properly graph.

Ruiyu Sun: Final presentation.

Scott Beard: Final presentation

Samantha Kimball: We will be preparing for our final presentation.

Vincent Lazzaro: Prepare for final presentation.

Summary of weekly advisor meeting: This week we met with our advisor and went over our progress for the project. We also got their advice for how to format our final presentation. We talked about some of the issues we were facing with the reliability of our heart readings and ways we could work to eliminate some of the noise we are getting.