Charlies Report Contribution

After repeated attempts to use our pre-provided tool, the eSense Wearable, the team was left with a tough but timely choice to figure out what to pivot to. We already had plans to use the eSenses accelerometer and gyroscope. With little time and lots of uncertainty, we decided to make a product with the potential to replace LifeAlert as more and more people carry their digital devices with them every day. Therefore, we chose a slight pivot, from eSense to SafeSense.

Building SafeSense started with sensor hookups. Gyroscopes, Accelerometers, Magnetometers, whatever came in the base package we sought out to install. We then began to think about HOW to harness this data. Provided our short timeframe and limited skill, we were not optimistic about launching any Artificial Intelligence tools, but we still tried. We managed to get a model to report 75% accuracy and decided to use Natural Intelligence to get the job done. Using repetitive observations and eagle-eyed pattern recognition, an algorithm was developed to detect a fall, while ignoring cases such as dropping the phone, shaking the phone, sitting, and/or laying down. The app is specifically for helping those who suffer from frequent, unexpected falls.

In the early stages of software development, there was a lot of overhead learning to do. Being a team with no Flutter experience, we had to diligently for hours to accomplish what others would achieve in days. Having prior experience in C++/Javascript helped us understand the syntax quite quickly, but the locating and correctly implementing packages and the simulator served as vacuums for my time. Finally, setting the code upon the native devices proved to be too difficult to accomplish for all the team members.

Being the member responsible for the design of the User Interface, it was up to me to make sure that there were no missing pieces to the puzzle of widgets. Since it was my (Charlie) first time developing on Flutter, I was introduced to it by my teammate (Alex) who set me up in his sensor-ridden environment. After messing with small widgets for a few minutes, I crashed the code and was forced to create a new project solely for the User Interface.

While I did not learn a lot about the sensors and data available on the Flutter Framework, I was able to dip my fingers into the realm of mobile development, which has caught my attention in a significant way. I appreciate working on this project with a team of motivated and unique members. Each of whom brought talent and perspective to the table to make my 2022 Digital Health course one to remember.