

# Assisted Medical Data Trending Cuff (AMDTC)

CPE 191/EEE193B Senior Systems Design Fall 2019-Spring 2020: Team 7

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## PROBLEM STATEMENT

Elevator Pitch – Our project is a medical device that can collect basic vital signs and create and store medical profiles to timely notify those with health risks

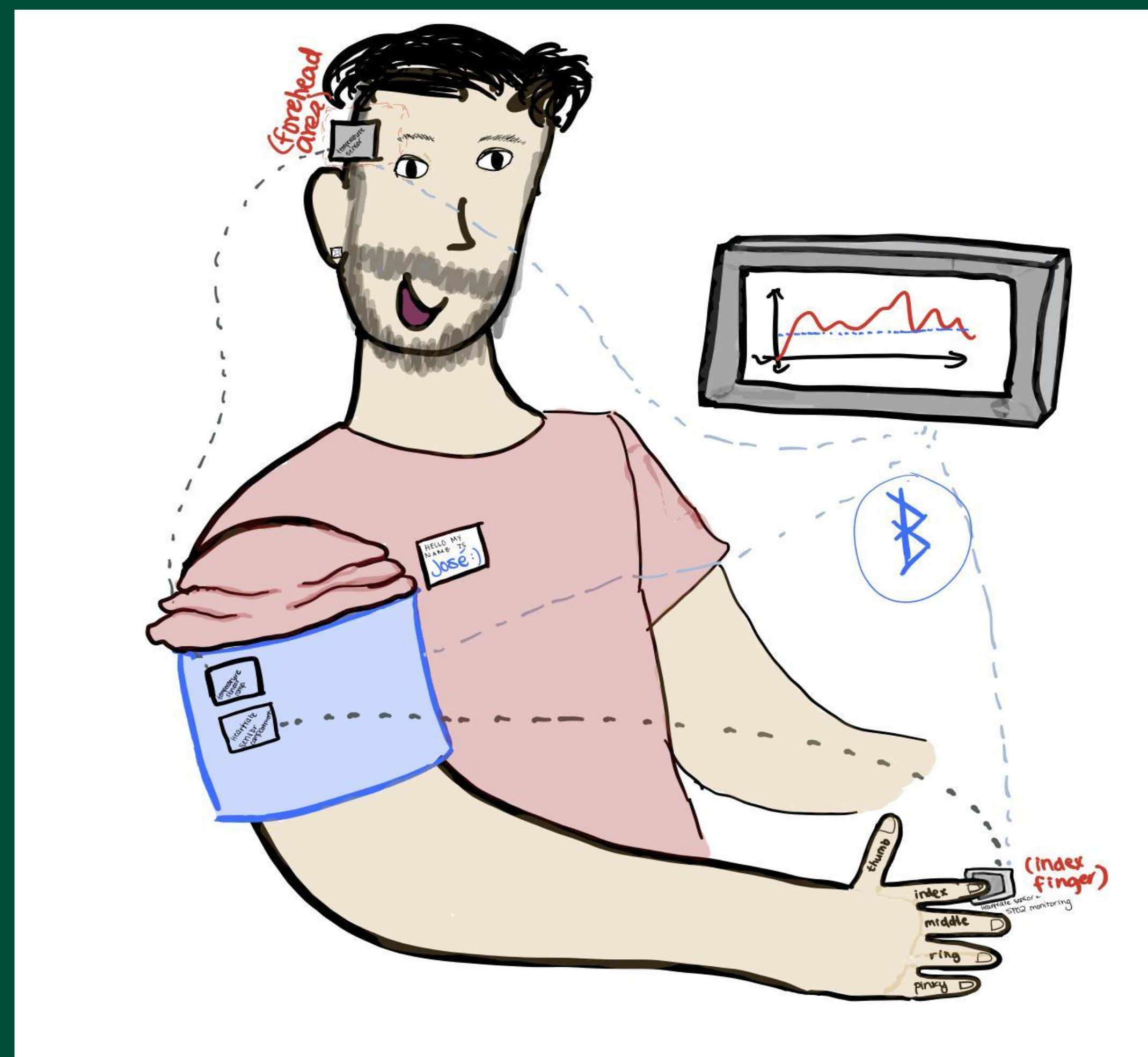


Figure 1: Rough Concept Sketch of Finished AMDTC

## BACKGROUND

Medical attention and advisement is a common problem amongst vulnerable demographics all over the United States. This is due to procrastination and avoidance of medical care driven by high healthcare costs. To many, the desire to seek care simply is not there, due to lack of education on needing medical attention. Our proposed solution to this issue is to provide a simple, at-home monitoring system which creates a rudimentary profile that tracks and statistically trends this data as one holistic package. Included are vital monitoring systems for blood pressure, temperature, blood-oxygen levels (SPO2), and heart rate, along with a user interface which can display these results over time. We also issue alerts to the user when their measurements are concerning and suggest for them to seek medical attention. This type of close monitoring can better assist those who do not know when to seek medical attention.

## SUMMARY OF WORK

We split the work into two main components: hardware implementation, and software implementation. The hardware component of the design (illustrated in Figure 2) included sensor calibration and integration, and casing for the sensors. The software portion of our system included data processing and trendline generation, as well as value detection and aggregation, and a user interface (illustrated in Figure 3).

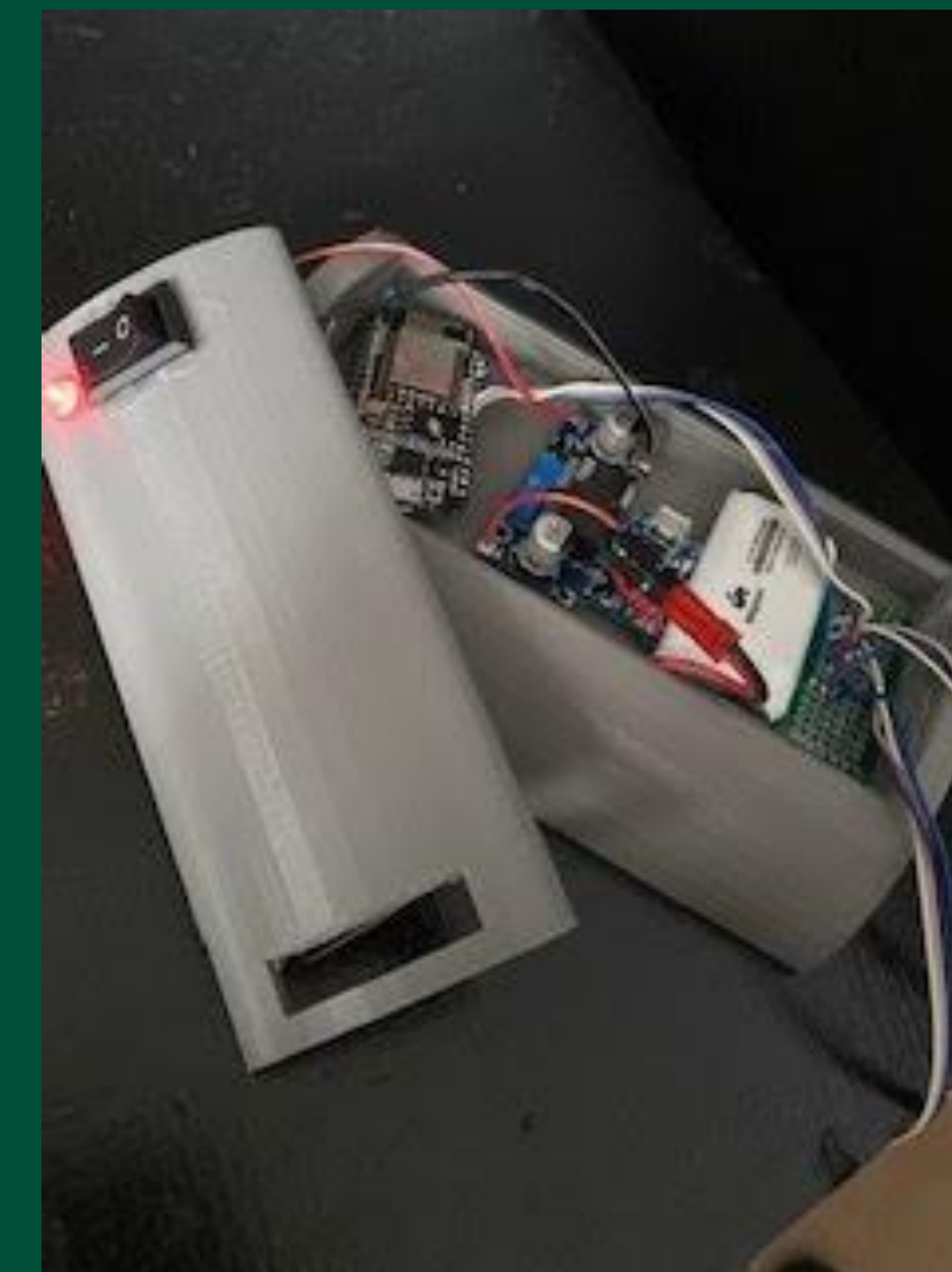


Figure 2: Fully integrated hardware system with a 3D-printed shell.



Figure 3: UI Welcome screen for AMDTC

## IMPACT ON COMMUNITY

- The best way to create awareness for continued healthcare monitoring, especially in today's troubling times, is to educate and monitor one's health closely.
- Our device is capable of doing just that, and more. People who use this product will be able to see a snapshot of their general health and know when to be concerned.
- Although Team 7 does not claim to be healthcare professionals, we believe that the impact of this innovation can be substantial. The first step to truly changing a mindset is education, which our product can provide.