# EE / CprE / SE 491 – sdmay25-12
# Pressure Sensor Patch
# Week 9 Report

*November 7th, 2024 - November 14th, 2024*
*Client: BAE Systems, Adaptive Adventures*
*Faculty Advisor: Santosh Pandey*

***Team Members:***

Aina Qistina Binti Azman - *Software Developer*
Bilal Hodzic - *Software Lead*
Nathan Turnis - *Software Developer*
Osaid Samman - *Scrum Master/Manager/Team Organization*
Sabrina Francis - *Hardware Developer*
Zane Lenz - *Hardware Developer*
Ivan Alvarado-Santoy - *Hardware Lead*

***Weekly Summary***

This week we had our bi-weekly meetings with Adaptive Adventures and BAE Systems. Zane asked about a general seat or pad Adaptive Adventures use for their athletes, in which they replied no and said a good measurement or size would be a standard wheelchair. Last Friday we had a meeting with our advisor's grad students to discuss progress and potential issues and solutions.

***Past Week Accomplishments***

- Osaid Samman:
  - Scheduled meeting times with the client
  - Fusion 360 Eagle for PCB design
  - Tested the wireless communication of sensor reading
  - Debugged sensor wiring issue
- Ivan Alvarado-Santoy:
  - Testing wireless communication of sensor reading from pico to a client and debugging data formats
  - Ordering hardware to build 8 tiles so each team member has their own tile component to test
  - Set up calibration code to find calibrated reading of each tile component
  - Investigate load cell resolution
- Zane Lenz
  - More learning Fusion 360
  - Looking into "complient mechanisms" for the spring component
  - Looking into combining tile and load cell bracket files
- Nathan Turnis:
  - Further testing with Jetpack Compose

    - Researched common UI solutions to make the app look good
    - Looked into purchasing a cheap android device so we can test Bluetooth
    - Worked on sending data from Pico over a network socket to a client
        - Successfully read data from load cell
- Bilal Hodzic
    - Further working with Jetpack
    - Further research and setup of Swift
    - Further testing with socket code
        - Data structure and sliding window design
        - Streaming analytics with kotlin
- Aina Azman:
    - Worked on the dashboard page
        - Looked into possible graph libraries to incorporate into the application for the real-time data graph visualization.
            - MPAndroidChart
            - GraphView
            - AnyChart Android
            - AChartEngine
    - Worked on the UI of Login and Sign Up Page
        - Focused on practicing usage of Jetpack Compose and Kotlin
- Sabrina Francis:
    - Got raspberry pico setup to run on computer
    - Worked on putting WiFi connection code and data reading code together
        - Trying to fix file import error

***Individual Contributions***

| **Team Member** | **Contribution** | **Weekly Hours** | **Total Hours** |
|---|---|---|---|
| Aina Qistina Binti Azman | Login, SignUp, and Dashboard Page | 6 | 41 |
| Bilal Hodzic | Jetpack compose, socket code, Swift, stream processing | 6 | 46 |
| Nathan Turnis | Jetpack Compose, UI, Socket Debugging | 6 | 40 |
| Sabrina Francis | Combining sensor reading code and WiFi connection code | 6 | 40 |
| Osaid Samman | Testing, debugging, Fusion 360 | 6 | 30 |
| Zane Lenz | More Fusion 360 | 6 | 42 |
| Ivan Alvarado-Santoy | Test wireless communication on Pico, Set up | 5 | 43 |

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|---|---|---|---|
| | calibration process | | |

***Pending Issues***

- Testing calibration process of tile components
- Defining transfer process of athlete from wheelchair to seated application
- Receive hardware for building individual tile components for each team member for testing

***Plans For the Upcoming Week***

- Calibrate load cells
- Building individual tile components for each team member for testing
- Get a clear understanding of the transfer process of athletes from their wheelchair to seated application in the next meeting with Adaptive Adventures rep.