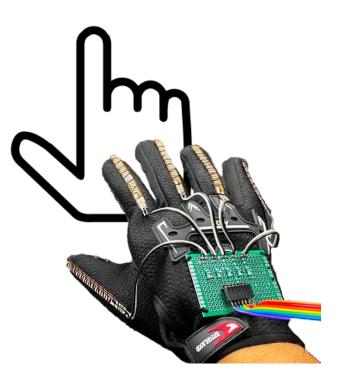
Mouseketool - Use Case

- Controlling your laptop from afar is difficult
- Remotes and mice are cumbersome away from desk

Solution

- The Mouseketool
- Implementation
 - Glove embedded with sensors that converts motion to mouse movement and touch to keystrokes



Solution Approach

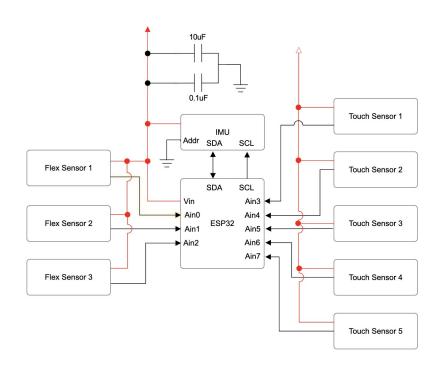


- Tailored to average user
- Wearable technology
- Uses Bluetooth (BLE)
- Accessible for limited mobility

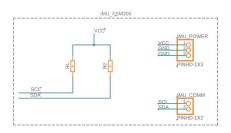
Use Case - Requirements

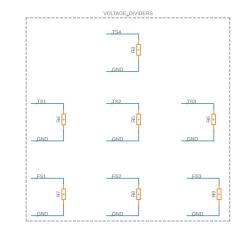
Requirement	Metric
Latency	300 ms
Weight	113-170 grams
Accuracy	90% user rating
Wireless Range	2.28 meters
Battery Life	2-3 hours

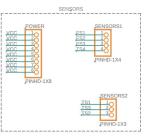
Hardware Diagram/Schematic

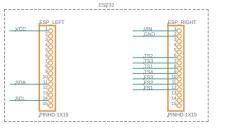




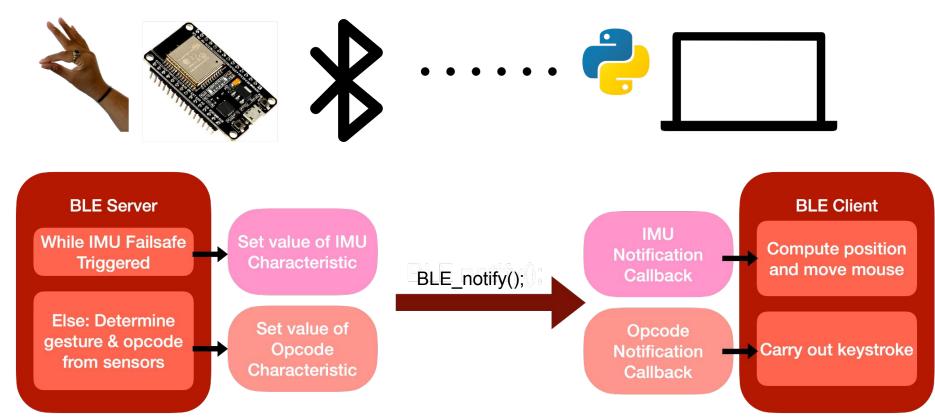




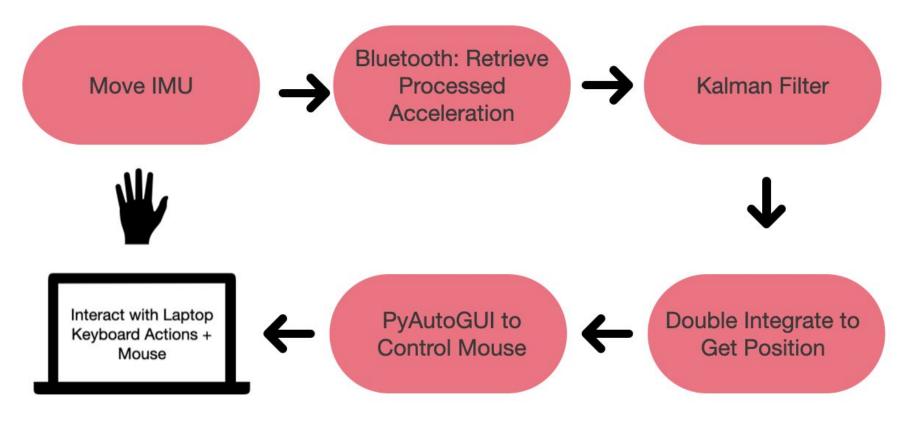


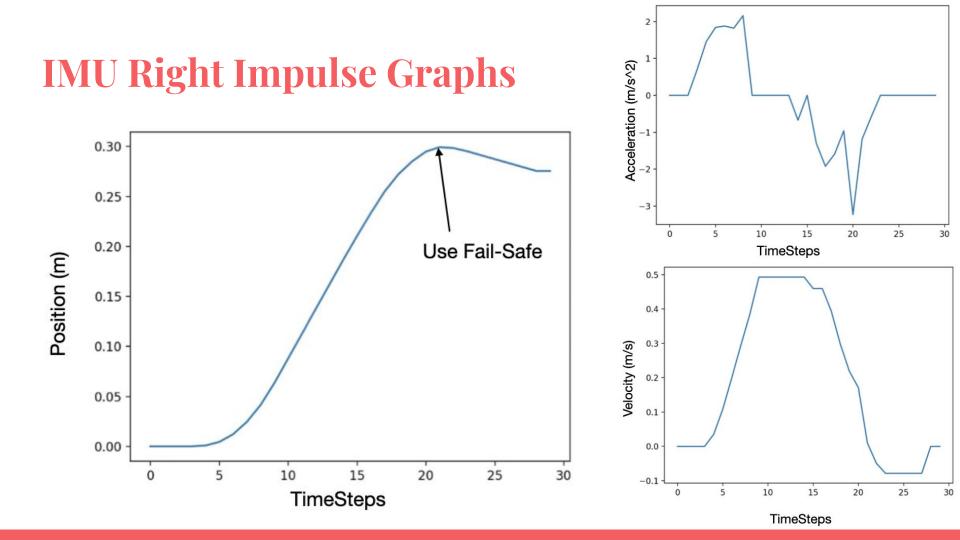


Software Diagram - Bluetooth



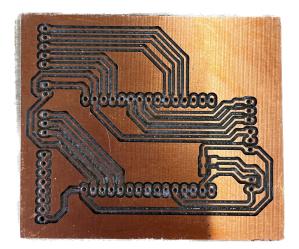
Software Diagram - IMU

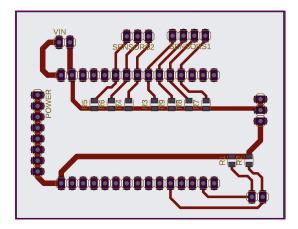




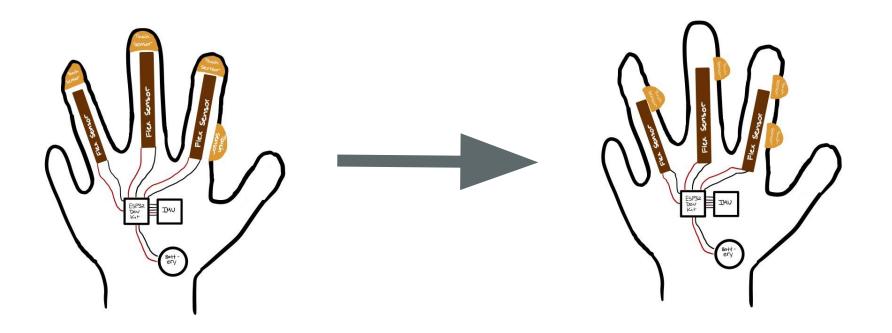
Custom PCB

- Final Dimensions: 62.5 mm x 48.3 mm (about 2" x 2.5")
- Communication protocol
 resistors
- Sensor parallel resistors
- Lithium ion battery compatible





Positioning



Testing Results

Requirement	Metric	Actual Results				
Latency	300 ms	40ms				
Weight	113-170 grams	191.78 grams				
Accuracy	90%	100% accuracy				
Wireless Range	2.28 meters	3.05 meters				
Battery Life	2-3 hours	>12 hours				

Final Demonstration Expectations

- Sensor 1 (Side of Pointer Finger): Fail-Safe to Move Mouse
- Sensor 2 (Pad of Pointer Finger): Left-Click
- Remaining Sensor Customization Options
 - Open Netflix/Hulu/YouTube
 - Increase/Decrease Volume
 - Increase/Decrease Brightness
 - Screenshot
 - Mute/Unmute
 - Close Tab
 - Switch Apps
- Usable mouse functionality with <1 second latency and position trailing

ID	Name	Sep, 2023			Oct, 2023				Nov, 2023				Dec, 2023		
	Name	11 Sep	17 Sep	24 Sep	01 Oct	08 Oct	15 Oct	22 Oct	29 Oct	05 Nov	12 Nov	19 Nov	26 Nov	03 Dec	10 Dec
1	Select uC board														
2	Select sensors & ensure compatibility														
3	Bluetooth Research														
4	Research Key Mappings														
5	Download & Implement uC Drivers														
6	Set Up Sensors w Comm Protocols & Drivers														
7	Test Sensors for Threshold Values														
8	Bluetooth Transmitter Setup														
10	Design Presentation														
9	Process Received Data														
11	Signal Processing Filters														
12	Interface IMU and Mouse														
13	Slack														
15	Write Code for Gesture 1														
14	Write Code for Gesture 2														
16	Write Code for Gesture 3														
17	Write Code for Gesture 4														
18	Small User Study														
19	Iterate on Design & Make Modifications														
21	Final User Study														
20	Final Modifications														
22	Final Presentation Preparation														
23	Final Presentation														12

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