

# IoT Hand Exoskeleton



Team 20  
"The Ohmies"  
Megha Mistry & Kevin Wang

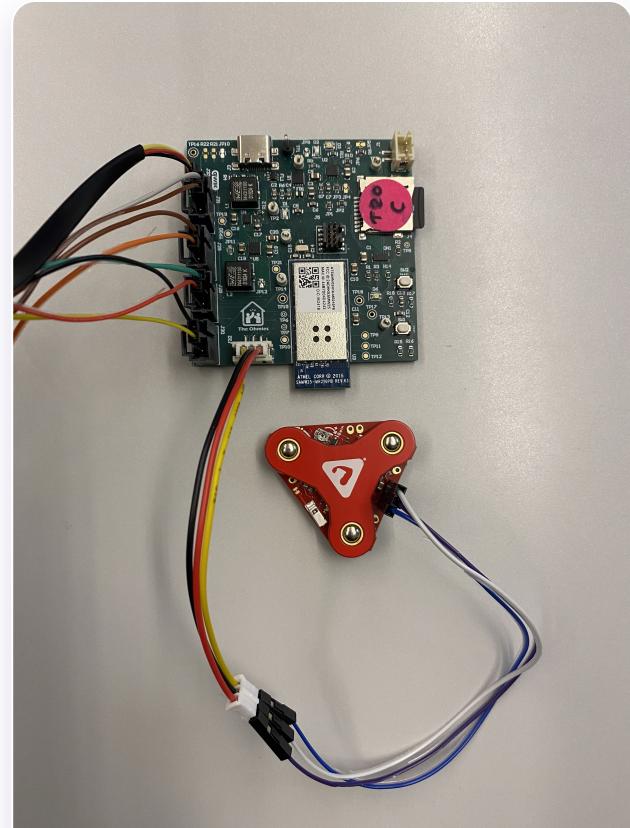
Our hand exoskeleton improves user grip strength and finger dexterity, assisting stroke and neurological injury patients in regaining hand mobility. The device can be triggered either via EMG signal or remote Wi-Fi control, with an emergency stop button for safety.

[Home](#)[System Diagram](#)[SRS](#)[HRS](#)



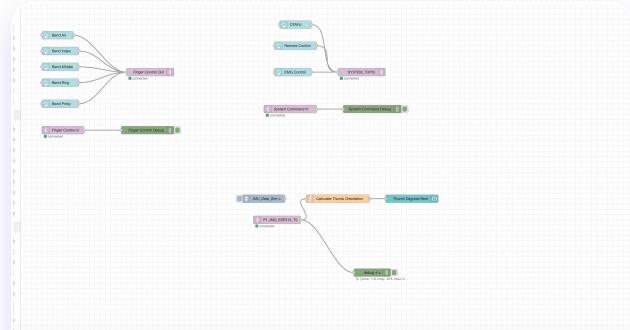
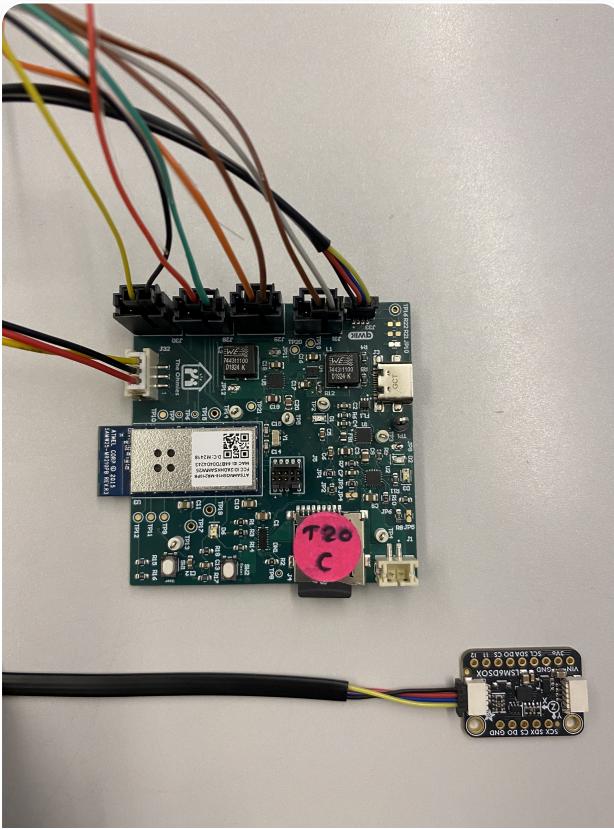
## Hand Exoskeleton Front

3D-printed hand exoskeleton with four servo motors providing precise finger control for assistive support and rehabilitation.



## EMG Sensor

MyoWare muscle sensor detects electrical signals from forearm muscles to trigger finger movements based on user intention.



## Wi-Fi Module

SAMD21 microcontroller with integrated Wi-Fi enables remote monitoring and control through our cloud dashboard.

## IMU Board

LSM6DSOX IMU sensor provides precise position tracking for finger movement angles and orientation feedback.

# Project Resources

## GitHub Repository

Access our complete project codebase including firmware, web interface, and documentation.

[View Code](#)

The screenshot shows a GitHub repository page with the following details:

File	Last Commit	Time Ago
A13G_Images	A13G readme added	last week
Application	A13G	last week
Bootloader Test Binaries	Initial commit	2 months ago
Bootloader	final	last week
Node-Red	readme updated	last month
.DS_Store	readme changed	2 weeks ago
.clang-format	Initial commit	2 months ago
.gitignore	Initial commit	2 months ago
A08G_README.md	Readme updated	2 months ago

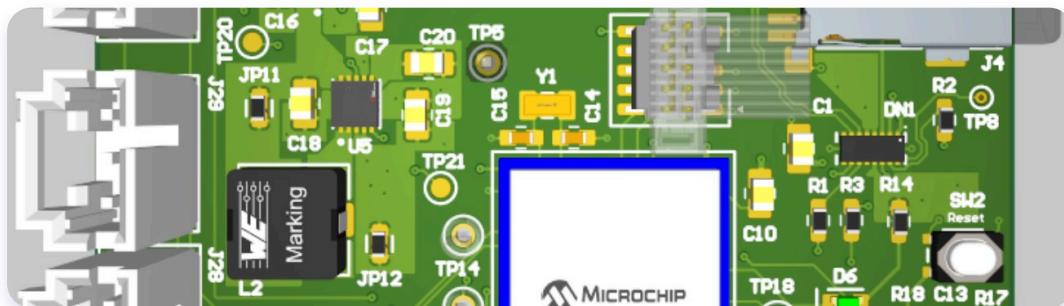
**Packages**  
No packages published  
[Publish your first package](#)

**Languages**  
C 79.7% • HTML 19.8%  
Other 0.5%

## PCB Design

Explore our custom 4-layer PCB design.

[View Design](#)



## Node-RED Dashboard

Access our cloud interface for real-time monitoring and control of the exoskeleton.

[Open Dashboard](#)



## Rehabilitation Assistant

ESE 516 Final Submission



© 2025 Team 20 "The Ohmies." All rights reserved.