Trinity Haisch

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EXPERIENCE

ACRO Biomedical Co., Ltd *Kaohsiung, Taiwan* Research and Development Intern (May-August 2025)

- Preformed supercritical carbon dioxide decellularization on porcine and rabbit tissue to create collagen scaffolds for product development
- Helped develop sterile decellularized bamboo scaffolds for muscle cell growth

Boston Children's Hospital *Boston, MA* Research Assistant Intern (June-August 2023)

- Implemented new feature in Batch Electroencephalography Automated Processing Platform (BEAPP) in Matlab that adds diagnosis to electroencephalogram files
- Developed standard procedure for heating electrolytes for electroencephalogram net use

Moonlighter FabLab *Miami, FL* Intern/ Counselor (June-August 2022)

- Created a bionic hand powered by muscle impulses from a forearm
- Taught middle school students Tinkercad, Scratch, and design & building skills

Olin Assistive Technology Lab *Needham, MA* Mechanical Subteam (January 2025- Present)

- Utilized CAD to design the magnetic mechanical actuation of braille e-reader cells
- Analyzed mechanical actuation systems to identify the most electrically efficient and manufacturable design for large-scale production

Olin Electric Motorsports *Needham, MA* High Voltage Subteam (August 2024-May 2025)

- Designed PCB layout in KiCad of insulation monitoring device latch and populated board
- Preformed electrical component analysis to minimize interference on PCB

PROJECTS

Machine Learning Drone (2025)

- Designed structural elements for a machine learning drone. Conducted FEA to ensure structures could withstand impacts with a FOS of 2.

Electric Rollerblades (January-May 2025)

- Designed and built rollerblade frame and integrated electrical components to make working electric skates that are adaptable to various foot sizes and can reach speeds up to ~15 mph

EMG Bionic Hand (2022-2023)

- Engineered a functional bionic hand by integrating mechanical design, electronics, and biosignal processing.
- Designed joints, pulley actuation and programmed an Arduino to actuate servos using EMG-derived muscle signals.

EDUCATION

Franklin W. Olin College of Engineering *Needham, MA*

Bachelor of Science - Mechanical Engineering May 2028

Relevant coursework: Software Design, Building Better Drugs, Linear Algebra, Thermodynamics

SKILLS

Programming Languages: Java, Python, Matlab, Git

Tools & Platforms: Solidworks, Fusion 360, Vectorworks, KiCad, Premiere Pro, Photoshop, After Effects

Other: Arduino, Video Editing, Drawing, Rollerblading