



**Main Focus:** A creative, observant, and self-driven team player always striving to learn and contribute insightful solutions to challenging problems. Eager to expand my knowledge in robotics, mechanical and electrical engineering, and computer science seeking a unique opportunity after graduating in August 2023.

## EDUCATION

### Wentworth Institute of Technology

August 2019 – August 2023 | Boston, MA

B.S. Electromechanical Engineering | GPA: 3.92/4.00

Interdisciplinary degree with a focus on mechanical engineering, electrical engineering, electromechanical systems (ABET accredited)

**Memberships:** Institute of Electrical and Electronic Engineers (IEEE), Remotely Operated Vehicles (ROV), Robotics, Accelerate

**Relevant Courses:** Digital System Processing, Feedback and Controls, Fluid Dynamics, Heat Transfer, Industrial Controls, MATLAB

## PROFESSIONAL EXPERIENCE

### Harvard MicroRobotics Robotistic Co-op

September 2022 – Present | Allston, MA

- Developed webserver using HTML, Flask, Sockets, and MicroROS to control the robot in a teleoperated or autonomous manner.
- Investigated necessary electronic components and how to organize them in an efficient manner based on hydrostatic forces.
- Prototyped various chassis and compliant mechanisms to help robot conform to convex ship hull.
- Collaborated in designing a planetary gearbox which was used for the locomotion of our robot.

### Raytheon Technologies Innovation/Robotics Co-op - Confidential Security Clearance

January 2022 – May 2022 | Andover, MA

- Automated bonding process using PLCs, Cobots, and Keyence vision systems yielding ~\$7 million ROI (**Project Lead**).
- Collaborated with expert automation engineers to increase factory efficiency by implementing an OCR system.
- Upgraded production line process from manual calibration to closed-loop control for increased cycle times and accuracy.
- Utilized CAD software to create modular and custom fixtures for surface mount technology equipment for various circuit cards.

### DEKA Research and Development Controls Intern

April 2019 - Sept. 2019 | June 2020 – July 2021 | Manchester, NH

- Responsible for designing and running multiple electrical and mechanical (impact and thermal) tests on biomedical devices.
- Worked directly under lead Controls engineer to design and implement a PID controlled heating and cooling system to operate safely and efficiently via Modbus TCP/IP and LabVIEW.
- Designed an RFID organization system via Modbus TCP/IP and LabVIEW to track and manage subsystem components.
  - Integrated this system to work with Python and SQL for Batch Production Records.
- Led effort to create a versatile test bench that streamlines multi-source serial data autonomously using Arduino and Python.
- Accepted greater responsibility that was quickly given to me after demonstrating understanding and capability to contribute high quality outputs.

### FIRST Robotics Intern

March 2019 - June 2019 | Manchester, NH

- Innovated baseline robots for FIRST demonstration events. Created long-term solutions at competitive costs.
- Modeled 3D printed hardstops which were dynamic enough to be used with different robot models over various years.
- Contributed to source-controlled software suite, ensuring new updates did not conflict within teams.

### Washington Street Café and Catering General Help

June 2012 – Present | Concord, NH

- Worked full-time in the summers in between elementary/middle school and now part-time assisting with the catering events, managing, invoices, and other necessities.

## SKILLS

- |   |                                    |   |
|---|------------------------------------|---|
| • Java, Python, MATLAB, C <ul style="list-style-type: none"><li>◦ PyQT, OpenCV, Numpy, Pandas</li></ul> | • Electrical wiring/Soldering      | • Statics and dynamics calculations                     |
| • Arduino, Raspberry Pi   | • NI cRIO PLC, LabVIEW             | • Simple machine work                                   |
| • Windows, Linux, Android   | • AC/DC circuitry and diagrams     | • SOLIDWORKS CSWA                                       |
| • Git and Surround version control  | • E-Box Design (KiCad)             | • 3D Printing   |
| • Microsoft Office Suite  | • Program and electrical debugging | • Public speaking                                       |
|   |                                    | • Trilingual (English & Arabic, conversational Spanish) |

## RELEVANT ACTIVITIES & PROJECTS

### Turnafit Project

Sept. 2018 – May 2021

- Developed a biomedical device to decrease blood loss on the way to a hospital by using inflation mechanisms and blood clotting technologies.
- Researched and designed prototypes which were presented to EMTs, patent lawyers, and entrepreneurs to receive feedback.

### Robotics - FRC Team 5813 "Morpheus"

June 2017 - May 2019

- Worked with senior engineers and mentors: designing, building, and testing software, electrical, and mechanical subsystems.
- Used PixyCam to help the robot autonomously track its target; this program won a "Design and Innovation" award.
- Mentored team Java proficiency and provide continued assistance with the development of the robot.