Rami I. Hanna

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My portfolio

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Los Angeles, CA | Boston, MA

Main Focus: Creative, self-driven engineer with experience from **DEKA R&D**, **Raytheon Technologies**, and **Harvard Microrobotics** prior to August 2023 graduation. Eager to expand and contribute interdisciplinary knowledge in cutting-edge, future-shaping fields.

EDUCATION

Wentworth Institute of Technology — **August 2019 – August 2023 | Boston, MA**

B.S. Electromechanical Engineering | GPA: 3.89/4.00

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

Awards: Dean's Award – Sole recipient per graduating class **|** Dean's List (every semester) **|** Leona and John Ghublikian Fund Recipient

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 Robotics Co-op — **Sept. 2022 – March 2023 | Allston, MA**

- Accomplished efficient control of the robot fleet in teleoperated or autonomous mode by developing a webserver using HTML, Flask, Sockets, embedded C, and MicroROS. Improved operational efficiency and performance.
- Enhanced maneuverability and performance in challenging environments by prototyping various chassis and compliant mechanisms to ensure robots conformed to convex ship hulls.
- Demonstrated innovation and improved overall robotic functionality by collaborating on the design of a planetary gearbox essential for robot locomotion.

Raytheon Technologies Innovation/Robotics Co-op - Confidential Security Clearance — **January 2022 – May 2022 | Andover, MA**

- Achieved a ~$7 million ROI through automation of bonding processes using PLCs, Cobots, and vision systems. **(Project Lead)**.
- Boosted factory efficiency by implementing an OCR system in collaboration with expert automation engineers.
- Increased cycle times and accuracy by upgrading the production line process from manual calibration to closed-loop control.
- Designed modular and custom fixtures for surface mount technology equipment on various circuit cards using CAD software.

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.
- Collaborated with the lead Controls engineer to implement a PID controlled heating and cooling system through Modbus TCP/IP and LabVIEW.
- Developed an RFID organization system using Modbus TCP/IP and LabVIEW to track and manage subsystem components.
    - Integrated this system to work with Python and SQL for Batch Production Records.
- Created a versatile test bench using Arduino and Python, streamlining multi-source serial data autonomously.

FIRST Robotics Intern — **March 2019 - June 2019 | Manchester, NH**

- Contributed to a source-controlled software suite to ensure seamless integration of new updates within teams.

SKILLS

- Data Analysis in Python, MATLAB
- Computer vision with OpenCV, Raspberry Pi, and Ubuntu
- Arduino using C
- PLC using NI cRIO, LabVIEW
- Version control with Git
- Electrical wiring/Soldering
- DC circuit design
- Statics and dynamics calculations
- Simple machine work
- SOLIDWORKS CSWA certified
- Public speaking
- Trilingual (English & Arabic, conversational Spanish)
- Microsoft Office Suite (Excel, Word, etc.)

RELEVANT ACTIVITIES & PROJECTS

Turnafit Project — **Sept. 2018 – May 2021**

- Developed a biomedical device by using inflation mechanisms and blood clotting technologies to decrease blood loss on the way to a hospital.
- 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.
- Implemented PixyCam, enabling autonomous target tracking by the robot and earning a "Design and Innovation" award.
- Provided Java proficiency mentoring to the team and continuous assistance in robot development.

Publications

Increasing Efficiency and Reliability of RF Machinery Testing Using Cartesian Robotics and Automatic Data Collection

IEEE SII/SICE 2024 — **Jan. 2023 – August 2023**

- Engineered a robot as the sole programmer to automate coaxial connector mating during testing. Laid the foundation for a system generating mating data from various sources.