

EDUCATION

- PhD in Electrical Engineering @ Northeastern University** 9/24 – Present | Boston, MA
Embedded Systems Laboratory (ESL)
- M.S. in Electrical Engineering @ Wentworth Institute of Technology** 9/22 – 6/23 | Boston, MA
Concentration: Robotics and Automation, GPA: 4.0
- B.S. in Electromechanical Engineering @ Wentworth Institute of Technology** 9/18 – 8/22 | Boston, MA
Minor: Applied Mathematics, GPA: 3.9

SKILLS/CERTIFICATIONS

Certifications/Licenses: SolidWorks CSWA, Stratasys Additive Manufacturing Certification

Technical Skills: Analog/digital circuit design, Electronics assembly (THT/SMD soldering), PCB Design, CNC operation, strength testing

Software: Ubuntu, ROS2, Tensor Flow, SolidWorks CAD/CAM, MATLAB, Simulink, KICAD, Multisim, LTSpice, Altium

Programming Languages: C/C++, Python, MicroPython

WORK EXPERIENCE

Research Engineer II, Robotics and Automation @ Kostas Research Institute, NU 9/23 – Present | Burlington, MA

- Collaborate in multi-disciplinary teams across the KRI consortium to design and create solutions and prototypes for industry and government contracts.
- Provide expertise in designing software for robotic platforms to be used in R&D experiments and hardware for embedded system sensor integration

Electrical Engineering Intern @ Werfen 5/22 – 8/22 | Bedford, MA

- Designed and tested piezo-crystal initialization circuit for blood hematocrit analysis
- Analyzed USB data-packets in MARS Hemolysis machines for root cause analysis of EE-prom connection errors
- Improved robustness of LED and camera test fixture with the implementation of an electronic current limiting e-fuse

Electrical Engineering Intern @ Vecna Robotics 5/21 – 8/21 | Waltham, MA

- Developed electronic systems/circuits for autonomous pallet jacks in collaboration with autonomy division
- Testing of IMU, Battery Load, LIDAR Leveling circuit, and CAN Transceivers for main control board
- Assembled test fixtures for PoE testing, Lidar Leveling using Altium

Electrical Engineering Technician @ Potomac Electric 5/20 – 12/20 | Dedham, MA

- Assembled and tested electronics used in motor drivers and power amplifiers.
- Refurbished, cleaned, and tested brushless DC motors, wound motor coils and armatures for new motor construction
- CNC machining of motor parts and completed quality inspection on samples

PROJECTS

Cognitive Hand Unit for Collaboration w/ Human Users (CHUCHU) Thesis 9/21 – 8/23 | Boston, MA

- Electromechanical project to design an accessible, open-source robotic hand for research purposes
- Designed a PCB in KICAD for low level motor and sensor control. Wrote C/C++, ROS2, microROS code in Linux workspace
- Characterization of CHUCHU grasping ability with GRASP Taxonomy

Photodynamic Therapy Device (PDT) Electrical Team 9/21 – 9/23 | Boston, MA

- Developed a portable medical device to be used in treating oral cancer
- Designed PCB and electronics system containing Laser-Diode control, Power management, and LCD screen

Underwater Remotely Operated Vehicle, WUROV Electrical Vice President 9/18 – 8/22 | Boston, MA

- Collaborated with executive board of five members to lead a team of 30 WIT students to design and create an underwater ROV to compete in the International Marine Advanced Technology Education (MATE) Competition
- Led electrical subteam to design, construct, and troubleshoot all electronic systems for the ROV

PUBLICATIONS

- J. Harling, E. Yeh, G. Ma, J. McCusker, and F. Cuckov, "The Design of an Open-source 3D Printable Humanoid Robotic Hand: CHUCHU", ASME International Mechanical Engineering Congress and Exposition (IMECE), 2022
- E. Yeh, J. Harling, S. Spencer, T. Hasan, J.P. Celli, F. Cuckov, "Electronic System Design for a Next-generation Laser-driven Portable Photodynamic Therapy Medical Device", IEEE Biomedical Circuits and Systems (BioCAS), 2022

- F. Cuckov, S. Spencer, P. Gorczynski, L. Lomba, G. Ingles, P. Watson, M. Kearns, J. Harling, **E. Yeh**, S. Khan, T. Hasan, JP. Celli, "Towards a Reconfigurable Cyber-Physical Systems Framework for Rapid Development of Scalable Next-Generation Smart Medical Devices" 2021 4th International Conference on Bio-Engineering for Smart Technologies, 2021