Jeffrey Costello

Mechanical engineer with extensive, hands-on, in-field experience designing, fabricating, and validating complex, automated, electromechanical systems.

Contact

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LinkedIn
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Portfolio
jdcostllo.github.io

Education

SM Mechanical Engineering
Massachusetts Institute of Technology
2022 - August 2024, Anticipated

BS Mechanical Engineering
Boston University, 2013 - May 2017

Skills

Computer-Aided Design
Solidworks, Onshape, PTC Creo

Computer-Aided Manufacturing
GibbsCAM, HSM Express

Programming
Python, Linux (Ubuntu, Raspian), Ladder, Raspberry Pi, HTML/CSS/Javascript, SQL

Industrial Automation
Rockwell RSLogix 5000, Universal Robots, Teledyne-Dalsa Vision Systems, Click PLC

Manufacturing
Wire EDM, Manual/CNC Mill and Lathe, FDM and SLA 3D Printing, Laser Cutter, Waterjet, Surface Grinder

Computing
MS Office, Google Workspace, Overleaf

System Integration
CAN, MQTT, RS232/RS485 Serial, Modbus, Relay Logic

Interests

Home Automation, Network Infrastructure, Raspberry Pi, IoT, 3D Printing

Professional Experience

MIT Global Engineering and Research (GEAR) Lab - www.gear.mit.edu
Research Assistant (Graduate Student), September 2022 - Present
Technical Associate II, October 2021 - September 2022
Research Specialist, January 2018 - September 2019

- ➔ **Actively researching** system design for municipal-scale electrodialysis (ED) desalination plants including market considerations
- ➔ **Fabricated an automated test apparatus** to research novel energy-recovery device for small-scale, decentralized, reverse-osmosis desalination systems
- ➔ **Commissioned an ED desalination system** for the Gaza Strip sponsored by UNICEF and USAID. All work was performed abroad in Israel
- ➔ **Designed and deployed critical electrical, hydraulic, and software subsystems** in a multiple field pilots to study novel control strategies for off-grid, solar-powered, ED desalination systems

BU Engineering Product Innovation Center - www.bu.edu/epic
Laboratory Supervisor, September 2019 - October 2021

- ➔ **Developed and conducted nine laboratory exercises,** 28 students per semester, for the course "ME345: Automation and Manufacturing Methods" covering **collaborative robotics, computer vision, programmable logic controllers, CNC manufacturing, and system integration.**
- ➔ Designed, developed, managed, and documented a **full-stack web-application for the integration and automation** of all autonomous systems in the Automated Design and Manufacturing Laboratory allowing students to program, operate, and collect data from a fully-autonomous manufacturing cell.
- ➔ **Instructed, trained, and supervised** students on the operation of manual and CNC manufacturing equipment including milling machines, lathes, wire EDM, laser cutters, basic power tools, and basic hand tools.

Chant Engineering Company, Inc. - www.chantengineering.com
Mechanical Engineer, June 2017 - December 2017

- ➔ **Project management, engineering math, mechanical design, and drafting** for two 22'W X 18'D X 10.5'H hydrostatic test chambers

Notable Coursework

MIT 2.720 Elements of Machine Design

- ➔ Mathematical modeling "guru" for an interdisciplinary team of engineers designing and building a desktop lathe. Used principles of precision machine design to inform all design decisions.

MIT 6.2222 Power Electronics Laboratory

- ➔ Four extensive laboratory projects covering all aspects of power converters, motor control, and component selection. Final project incorporating switched capacitor power supply, stepper motor driver, and PSoC.