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Education

Bachelor of Science in Electromechanical Engineering

Aug 2019 – Aug 2023

Wentworth Institute of Technology – Boston, MA

GPA: 3.9/4.0

Minors: Applied Mathematics, Computer Science

Honors: Magna Cum Laude, Dean's list recipient every semester

Extracurriculars: Wentworth Engineering Honors Society Member, Wentworth Men's Soccer Team player

Professional Experience

Tulip Experience Center Program Manager

Nov 2024 – Present

Tulip Interfaces – Somerville, MA

- Developed and executed strategic roadmap for Tulip's Experience Center, aligning program objectives with company's growth targets and market demands
- Managed and mentored a team of two co-op engineers, providing technical guidance, career development, and performance evaluations
- Led workshops and training sessions, providing guidance to prospective partners wanting their own Experience Center program
- Trained and mentored Tulip's sales team in how to successfully give a demonstration of the Tulip platform to customers
- Designed and built new travel kits using Fusion 360 and 80/20 for Sales Engineers to bring for demos at prospective client sites

Tulip Experience Center Lead

Jun 2024 – Nov 2024

Tulip Interfaces – Somerville, MA

- Led and scaled Tulip's Experience Center program, creating immersive demonstrations of manufacturing technology for Fortune 500 clients
- Spearheaded Tulip's presence at major manufacturing events including IMTS, Operations Calling, and Hannover Messe, delivering live demonstrations to 500+ attendees
- Designed and implemented 15+ interactive manufacturing applications using the Tulip platform, showcasing real-time data collection, quality control, process optimization, and integration with external APIs
- Established and maintained strategic partnerships with several enterprise companies, providing consultation on manufacturing digitization strategies
- Developed a full 3D model of the Tulip Experience Center using Fusion 360 for use as a virtual TEC for prospective clients and to minimize TEC downtime when planning and executing large-scale design or layout changes

Tulip Experience Center Engineer

May 2023 – Jun 2024

Tulip Interfaces – Somerville, MA

- Developed and maintained complex manufacturing applications for Experience Center demonstrations and client proof-of-concepts
- Created comprehensive technical documentation and training materials for demonstrations of Tulip's features and capabilities
- Collaborated with product team to identify and implement feature improvements based on client feedback
- Delivered live demonstrations to prospective clients, effectively communicating technical concepts to diverse audiences

Tulip Experience Center Applications Engineering Co-op

Sep 2022 – Dec 2022

Tulip Interfaces – Somerville, MA

- Built and maintained demonstrations of manufacturing processes integrating IoT devices, sensors, and

industrial equipment with Tulip's platform

- Performed daily audits and maintenance of the TEC's hardware and software systems, reducing issues during client tours by 70%
- Implemented custom software solutions to showcase manufacturing process optimization
- Assisted in developing demonstration environments for client visits and virtual tours

R&D Design Engineering Co-op

Jan 2022 – Apr 2022

Barnes Group – Peabody, MA

- Led comprehensive testing of manifold systems, comparing Type-J and Type-K thermocouples in Hot Runner controllers, utilizing data acquisition systems and Excel for analysis
- Designed and implemented an innovative energy harvesting system for injection molding machines, achieving 0.35W power output over 10 actuations
- Engineered custom components including controller backing and mounting solutions using Solidworks and DFM (Design for Manufacturability) principles
- Assembled and wired Hot Runner Controllers from scratch, ensuring precise temperature control for multiple zones

Technical Projects

Autonomous Meal Delivery Robot

Jan 2023 – Aug 2023

Senior Design Project

- Led development of an autonomous navigation system for hospital meal delivery using ROS, Ubuntu, and Nvidia Jetson Nano
- Designed and implemented custom path planning algorithms incorporating obstacle avoidance and efficient routing
- Integrated LiDAR and ultrasonic sensors for real-time environment mapping and decision making

Energy Harvesting System for Injection Molding

Jan 2022 – Jun 2022

Barnes Group Co-op Project

- Innovated a novel energy harvesting system generating 0.35W from mold movements in injection molding machines
- Engineered custom testing apparatus and components using Solidworks and DFM (Design for Manufacturability) principles
- Conducted comprehensive testing using multimeter and oscilloscope for precise measurements

3D Printer Build and Integration

2020 – 2021

- Built and configured a FDM Cartesian 3D printer, including firmware programming in C++
- Implemented headless printing server using Raspberry Pi for remote operation
- Developed custom print profiles and calibration procedures for optimal print quality

Black-Scholes Equation Research

Aug 2020 – Dec 2020

Graduate Mathematics Project

- Authored comprehensive research paper on the Black-Scholes equation in financial mathematics
- Developed mathematical models and implementations using LaTeX for complex equation representation
- Created reference guide detailing solution methodologies for partial differential equations

Skills

Programming Languages: C++, JavaScript, Python, TypeScript, React, Cypress, SQL, R, LaTeX, Matlab

Protocols: Modbus, MQTT, OPC-UA, Serial, Ethernet, WiFi

Technologies: ROS, Linux, Git, Nvidia Jetson, Raspberry Pi, Arduino, I2C, Machine Learning, AWS

Software: Solidworks, Fusion 360, Node-RED, HighByte, HiveMQ, Rockwell Automation's FactoryTalk Optix, Salesforce, LandingAI, Jira, Excel, Powerpoint, Figma, National Instruments DAQ, NI Multisim, Simulink

Hardware: LiDAR, Sensors, Microcontrollers, 3D Printing (FDM & SLA), Soldering

Machine Tools: Drill Press, Lathe, Milling Machine, Band Saws, CNC Machining