Easson Weisshaar

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Education

Electrical Engineering Honours Co-op BASc, ***University of Waterloo*** Waterloo ON | Sep. 2021 – Apr. 2026

- GPA 3.7/4.0
- Electrical Engineering student communications coordinator, University of Waterloo Athletics

Electrical Design & BMS Software ***Battery Workforce Challenge Team*** Waterloo ON | Jan 2024 – Sept 2024

- Redesigned BMS AFEs using Altium

Experience

Electronic Reliability Engineer Co-op, ***Ciena*** Ottawa ON | Jan. 2025 – Apr. 2025

- Developed automated hardware testing systems including DMMs, LCR Meters, power supplies, and relay boards
- Conducted accelerated life testing on SMT capacitors to determine suitability for telecommunications applications based on load life performance metrics
- Performed comprehensive signal integrity testing on DACs, OSFP modules, and modems using VNA
- Executed hardware validation and system integration testing on network cards between corrosion testing cycles
- Created VBA-based software that compiled FMECA database information into a single local file, improving data accessibility
- Implemented Arduino-based sensor interfaces for dust testing environments to identify and analyze potential failure causes Enforced strict adherence to manufacturer data sheet specifications to maintain test integrity and ensure reliable results

Electrical Engineering Intern, ***Wrmth*** North Bay ON | May 2024 – Aug. 2024

- Designed and assembled a **PCB and electronic system** for quality assurance testing through multiple design iterations
- Electrical systems **validation** for various in-house components including PCBs, power supplies, and products
- Implemented **C/C++ programming** for quality control applications, and sensors for monitoring wood-steaming
- Interpreted complex component **datasheets** to accurately implement and calibrate thermistor-based measurement systems
- **Led** a cross-functional team to develop and launch new products for a major international trade show on a tight timeline
- **Documented** the engineering design process for seamless hand-off to subsequent teams
- **Soldered** and assembled key electrical components for product assembly

Software Quality Assurance and Automation Specialist, ***Siemens Healthineers*** Ottawa ON | Sep. 2023 – Dec. 2023

- Engineered comprehensive **automation testing** frameworks for medical devices using Python
- Conducted rigorous **QA testing** on medical hardware and software components, supporting cross-functional development teams
- **Triaging** failed automation test cases from Jenkins and implanted software patches

Junior Frontend Developer, ***Claero Solutions*** Calgary AB | Jan. 2023 – Apr. 2023

- Collaborated in a small team under tight timelines to provide client deliverables on the company's primary projects
- **Version control** using SVN and Git version controls

Data Analyst Intern (Capital Projects and Marketing) , ***Tidewater Midstream*** Calgary AB | May 2022 – Aug. 2022

- Scripted using **Python** and **VBA** to improve workflow and optimize daily team tasks
- Worked in cross-functional teams to research feasibility of prospective projects

Skills

Hardware: Altium, Proteus, LTSpice, Keysight ADS, Soldering, Test Equipment, STM32, Signal Theory
Software: Embedded C, C/C++, Python, Linux, Git, MATLAB, JavaScript, UART, SQL, AWS
Interests: Hockey, RF Engineering, Data driven sports (specifically hockey), Lacrosse, Medical Technology, World Geography

Projects

Electrical Components QC Device North Bay ON | May 2024 – Aug. 2024

- Designed and optimized a custom PCB using **EasyEDA**, iterating multiple prototypes to optimize performance and reliability
- Refactored existing firmware, resulting in an 80% reduction in testing cycle time, significantly improving production efficiency
- Executed precise schematic entry and PCB layout designs, optimizing circuit performance

Reservoir Control System Simulation Waterloo ON | June 2023 – July 2023

- Developed water reservoir system using **embedded C**, Proteus PCB layout & schematic, STM32, and signal theory

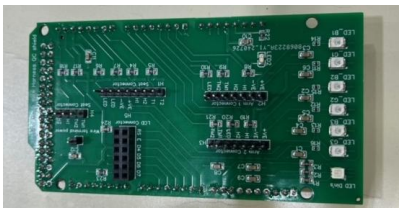
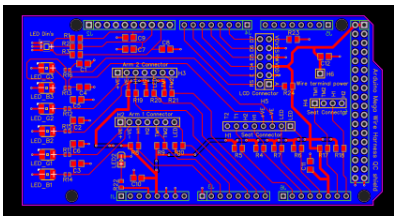
- Writing and debugging embedded STM32 firmware
- Board validation and board assembly using reflow soldering and through-hole components

Interactive Escape Room Waterloo ON | Sep. 2021 – Dec. 2021

- Developed embedded escape room puzzle with **Embedded C/C++**, STM32, sensors, and circuitry

Electrical Components QC Device

- Developed an electronic device initially designed for testing wiring harnesses, with expanded capabilities to test additional electrical components of in-house products.
- Designed a PCB using EasyEDA after extensive testing and redesign of the prototype.
- Updated existing C++-based firmware, reducing the testing cycle time to 20% of the initial run time.
- 3D-printed the device enclosure.

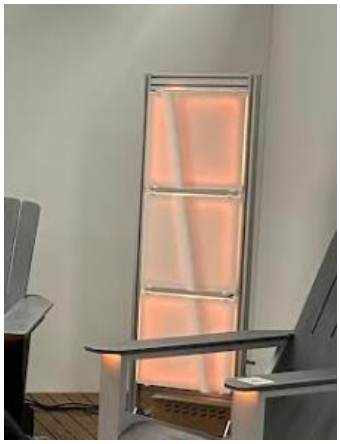
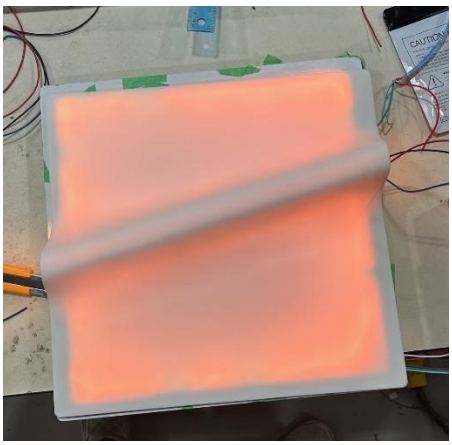




N.E.A.R Bot Arm

- Modified an open-source 5 degrees of freedom (DoF) robotic arm to function as a concrete 3D printer.
- Designed the electrical system for the arm by selecting appropriate power supplies, calibrating stepper drivers, and setting up stepper motors.
- Assembled the system using in-house resources.

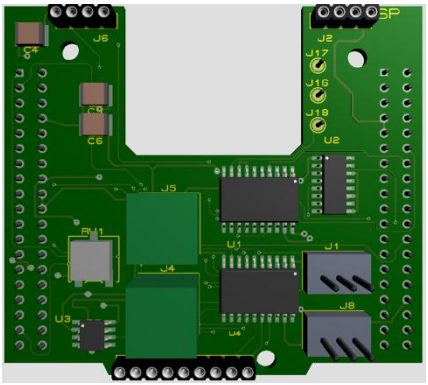

Haute Wall Light

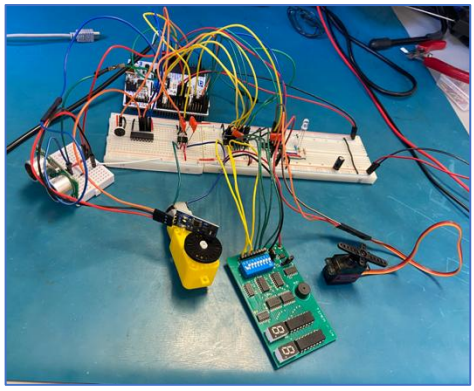
- Developed an outdoor luxury lighting fixture to be show cased at an international trade show based on renderings
- Repurposed ESP32-based hardware from other products and updated existing firmware to achieve different lighting effects

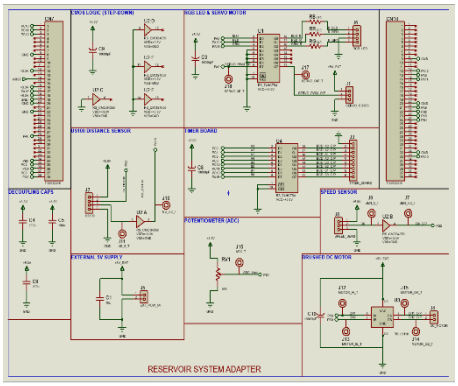



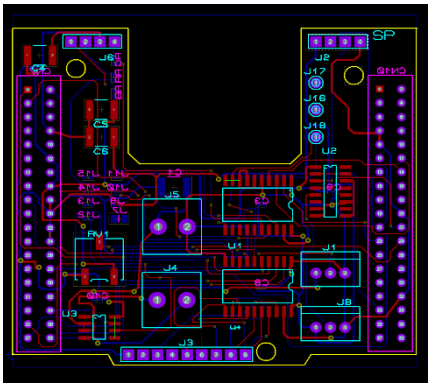
Reservoir Control System Simulation

- Designed, wired, and tested **circuitry**. Performed component selection and optimization.
- Developed **embedded C/C++** on **STM32** F401RE **microcontroller** to control water reservoir simulation.
- Setup communication system with peripherals using **USART** and signal level modulation to interface with a variety of **components, sensors, and actuators**.
- Designed circuit schematics and multi-layer **PCB** using **Proteus** and **SPICE**.



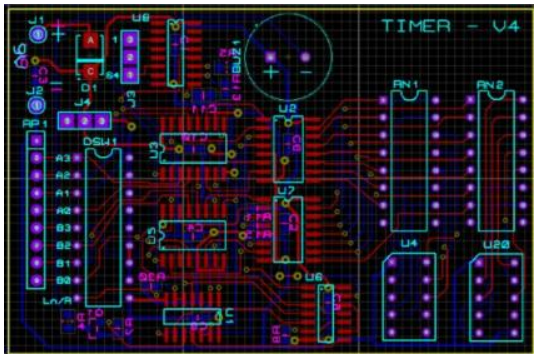


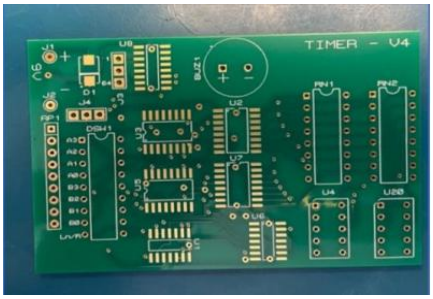


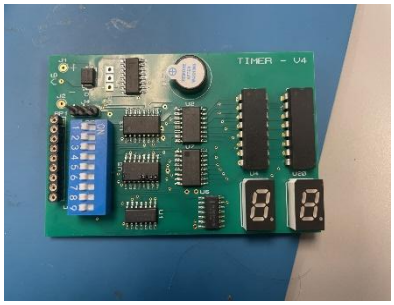


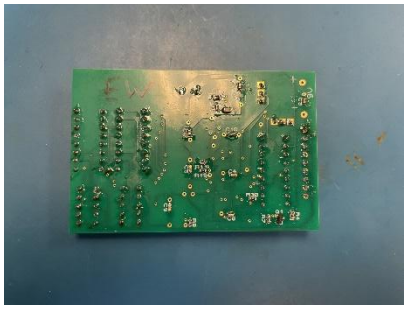
Digital Timer PCB

- Soldered a variety of circuit elements, IC's, surface-mount, and passive components using through-hole, reflow, and surface mount techniques.
- Tested PCB using a variety of in-lab test equipment, including oscilloscopes and DMMs
- Utilized provided Proteus layout to implement PCB.
- PCB board validation via circuit probing









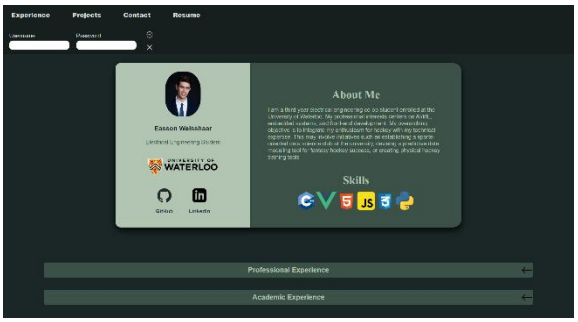
Backend Precondition Generator

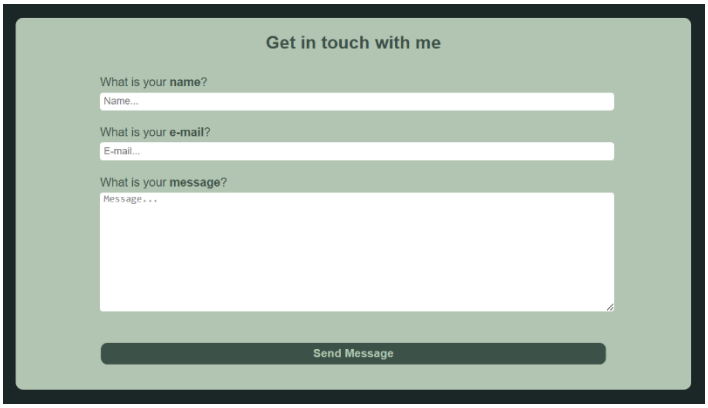
- Developed **API** using combination of **Python**, **Pytest, JavaScript**, **Bash**, and the **Realm Database SDK**.
- Allows for the ability to extract and manipulate **Android** PDA databases
- **Reduced** test suites runtimes by numerous hours
- Integrated **API** into the **BDD** test framework for simplified usage among QA team

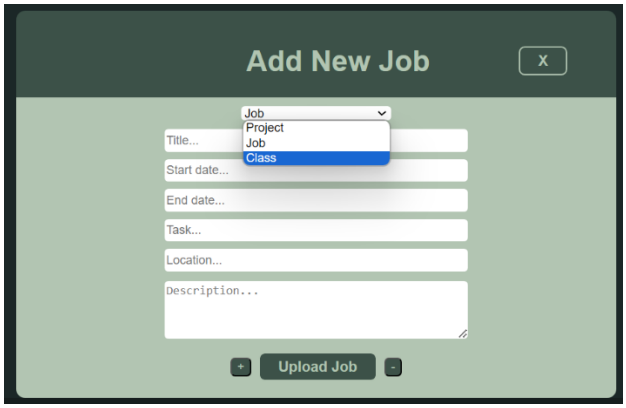
Vue.js Portfolio Web Application

- Portfolio web application created from scratch using the **Vue.js** framework, along with **HTML, CSS, and JavaScript**
- Created an **AWS REST API** using **Node.js Lambda functions**, and **DynamoDB** to allow the dynamic updating of professional, academic, and project experience
- Developed a server-side authentication system
- Tested **POST**, **GET HTTP** methods using **Postman**
- Created an "message me" section using **AWS Simple-Email-Service**

(currently unlaunched, please request a demo)

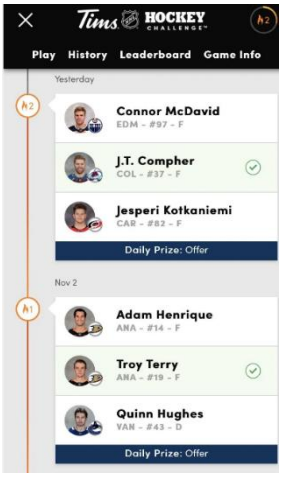






Tim Horton's NHL Challenge Tool

- Created a text SMS service to communicate the most probable picks on a given day
- Created using **Python** based **Selenium**
- Text SMS sent through the **Twilio API**
- Script hosted through an **AWS EC2** instance



Robotic Grappler Controller

- Developed VHDL software to control Altera MAX10 FPGA, extending robotic arm two-dimensionally.
- Designed state-machine driven grappler, extender, one-directional controller.
- Integrated manual slide switches for user selected two-directional coordinates for grappler placement
- Utilized a seven-segment LED to display real-time XY coordinates to the user.