Luna Zhou

548-577-8888 d24zhou@uwaterloo.ca Linkedln Github Personal Website

Education

University of Waterloo **Class of 2028**

Candidate of Applied Sciences in Electrical Engineering *Waterloo, Canada*

- Coursework: Algorithms and Data Structures, Numerical Methods, Digital Computers, Electronic Circuits, Discrete Mathematics and Logic Mathematics and Logic

Skills

Programming Language: C++, C, Python, HTML, CSS, JavaScript, Matlab, VHDL, Assembly
Developing Tools: VS Code, Altium Design, Linux, PlatformIO, STM32CubeIDE, Quartus, LabVIEW, Git, Figma
Spoken Languages: English and Mandarin

Work Experience

Gas Sensor Characterization Research **Jun 2024 – Aug 2024**

Research Student *Simon Faster University, Vancouver*

- Developed and debugged **I²C communication** between a **LabJack U6 Pro** and the Honeywell HIH8000 **humidity/temperature sensor**, including address scanning, bus configuration, and error handling.
- Developed a **Python-based GUI** to display real-time environmental sensor data, integrating status bit decoding, data scaling, and diagnostic checks for accurate and user-friendly monitoring.
- **Troubleshot hardware–software integration issues** by verifying wiring, adding pull-up resistors, and validating communication protocols, resulting in reliable sensor readings for the gas sensor characterization platform.

Dongzhuo Auto Electronic Co ltd **May 2024 – Aug 2024**

Engineering Reasearch and Development Service *Waterloo, Remote*

- Designed a PCB soldering defect reference layout in **Altium**, replicating identical components to illustrate IPC-compliant joints versus common soldering faults for quality assurance and process optimization.
- Prototyped a **MCU control circuit** for a car diffuser—connected to an off-the-shelf atomizer, added PWM for mist levels and a water-level input, then **fixed basic reliability issues in the schematic**.

Nexapay **Sep 2024 – Dec 2024**

Front-End Web Developer / User Experience *Singapore, Remote*

- Developed company website using **HTML and CSS**, ensuring cross-device compatibility with pc-first design.
- Redesigned the **user interface** of **interactive email** template using **Figma**, archiving content in **WCMS**

Projects

Temperature Sensor | *C, STM32, TMP102* **July 2025 - Aug 2025**

- Developed code used **CubeIDE** for the STM32F401 microcontroller to interface with the digital temperature sensor.
- Soldered the TMP102 sensor and **built the circuit** to ensure proper functionality and communication.
- **Tested** and verified the temperature sensor's accuracy and performance to complete the project.

Smart Sprout | *C++, Arduino IDE, Analog Sensor Interface, Relay Control, Circuit Prototype* **May 2025 - Jun 2025**

- **Developed** an **automated plant irrigation system** with **Arduino IDE** and **C++**, integrating a **soil moisture sensor** to convert **analog readings** into **calibrated control thresholds**.
- **Implemented digital control** of a **water pump** through a **relay module**, activating **irrigation automatically** when **moisture levels** fell below **set parameters**.

SCD Auxiliary Prior-Warning Product | *C, STM32, Arudino* **Sep 2023 - Dec 2023**

- **Analyzed ECG waveforms** and identified **key patterns**, **recognize abnormalities** associated with cardiac conditions and interpreting their significance in diagnosis.
- Designed **mechanical diagrams** using **Onshape**, assembled the circuit while created test plan used a **vibration machine** to simulate heart impulses and a **mobile phone signal** to replicate human ECG activity.

Extracurricular

Waterloo Aerial Robotics Group | *May 2025 – Now* **Electrical Engineering**

- Designed and fabricated a voltage conversion PCB in Altium, enabling stable power delivery to onboard systems.
- Ongoing design of a Battery Eliminator Circuit (BEC), completing component selection and schematic development.