

Alex Zheng

a58zheng@uwaterloo.ca | al3xzheng.com | linkedin.com/in/al3xzheng | github.com/al3xzheng

SKILLS

- **Software** | C, C++, Java, Python, C#, SQL, MATLAB, SOAP/REST Web Services, Git, Azure
- **Hardware** | STM32, Arduino, Soldering, Oscilloscope
- **CAD** | Altium Designer, SolidWorks, AutoCAD

EXPERIENCE

Undergraduate Research Assistant

University of Waterloo

Waterloo, ON

Sep 2024 – Dec 2024

- Cu Bond Characterization with Microsensors.

Software Developer Intern

Ontario Ministry of Transportation

Toronto, ON

Jun 2024 – Aug 2024

- Developed Python and SQL scripts to validate and format driver-data batch requests from the database to the Card Ordering System
- Tested the Mobile Camera Unit by to ensure remote businesses
- Led the development of documentation for all Photo Card applications reducing onboarding time by 80%

Hardware PCB Developer

University of Waterloo Midnight Sun Solar Rayce Car Team

Waterloo, ON

Sep 2023 – Apr 2024

- Identified the MAX17261 IC and the appropriate shunt, size, and values for the battery level detection PCB
- Designed and assembled the PCB using Altium Designer by considering noise, decoupling capacitors, & vias

Mathematics Instructor

Marilake Academy

Toronto, ON

Sep 2021 - Apr 2023

- Taught operations to 15 Gr. 1s and functions to 5 Gr. 9s over 156 hours, yearly
- Effective lessons, feedback, and support resulted in freelance private tutoring of students after course

PROJECTS

Elevator System (WIP) | C++, ARM, ROS, STM32CubeIDE, STM32 L476, SolidWorks

- Developing an elevator model to program the STM32 L476 microcontroller, peripheral motors, and real-time sensors to control an elevator system
- Stores and transmits sensor data to phone, telling users the number of patrons per floor in a building

Coffee Can Antenna (WIP) | RF, Op-Amps, LPF, MOD, MXR, LDO, VCO, Breadboard, MATLAB, Audacity

- Building a radar from hardware components and coffee cans to learn about RF and analog design

SolidWorks Quoting System (WIP) | .NET, C#, SolidWorks API, Visual Studio

- Building a SolidWorks add-in to price 3D-printing SW parts through OOP, COM Interop, and the SolidWorks API

ACHIEVEMENTS

Canadian National Team Dragon Boat Paddler

Rayong, Thailand

- Won 1x Gold and 3x Silver for Team Canada 18U at the 2023 World Champs. against China, USA, Thailand

EDUCATION

University of Waterloo - BSc. Mechatronics Engineering | GPA: 95.14%

Sep 2023 – Apr 2028

First In Class Engineering Scholarship