

# Alex Zheng

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## 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, format, and transfer driver data to the Card Ordering System
- Tested .NET apps using NUnit and WebLogic servers in SoapUI using WSDL, XML/XSD, SQL, JakartaEE files
- Created 4 local WebLogic domains to streamline local testing and live-reloading of the PhotoCard apps
- Wrote 7 wiki portals, design, and config guides from scratch using UML, reducing onboarding time by 80%
- Troubleshooted cameras, scanners, sigpads, and application connectivity issues for the Mobile Camera Unit

### 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

- Demonstrated communication by teaching operations to 15 Gr. 1s and functions to 5 Gr. 9s over 156 hours, yearly

## 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 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
- Won 1x Silver and 1x Bronze for Team PDBC 24U at the 2024 CanAm Champs against 13 university teams

## EDUCATION

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

Sep 2023 – Apr 2028

First In Class Engineering Scholarship