

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

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 driver's license Card Ordering System
- Led the development of documentation for all Photo Card applications by researching JEE, WebLogic, and web services

Hardware PCB Developer

University of Waterloo Midnight Sun Solar Rayce Car Team

Waterloo, ON

Sep. 2023 - Present

- 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

Humidity, UV, and Temperature Sensors | C++, Arduino, Arduino IDE, Breadboard

- Programmed humidity, UV, and temperature sensors to detect for water, UV radiation, and the weather conditions for the planet Trappist-1c @ the UoT Science Unlimited Design Challenge

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

BASc. Mechatronics Engineering | GPA: 95.14% | Dean's Honour List
Recipient of the First In Class Engineering Scholarship

Waterloo, ON

Sep. 2023 - May 2028

Commented [AZ1]: Try to get a point on utilizing SoapUI and how I supported the APIs and tested them and wrote some stuff, gotta get to work to get to this point!