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   **Waterloo, ON**
University of Waterloo   Sep 2024 – Dec 2024

- Cu Bond Characterization with Microsensors

Software Developer Intern   **Toronto, ON**
Ontario Ministry of Transportation   Jun 2024 – Aug 2024

- Developed Python and SQL scripts to validate, format, and transfer driver data to the Card Ordering System
- Tested .NET apps, and SOAP-based WebLogic servers in SoapUI using WSDL, XML/XSD, SQL, JakartaEE files
- Deployed the local WebLogic domains for PhotoCard apps from scratch to streamline development
- Created wikis and build guides for all PhotoCard apps in Azure from scratch, reducing onboarding by 80%
- Troubleshooted camera, scanner, sigpad, and services connectivity issues for the Mobile Camera Unit

Hardware PCB Developer   **Waterloo, ON**
University of Waterloo Midnight Sun Solar Rayce Car Team   *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   **Toronto, ON**
Marilake Academy   *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 - BASc. Mechatronics Engineering | GPA: 95.14%   Sep 2023 – Apr 2028
        First In Class Engineering Scholarship