Alex Zheng

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SKILLS

- **Languages** | C/C++/C#, Python, Java, JavaScript, SQL, HTML, CSS, MATLAB
- **CAD** | SolidWorks, Altium Designer, AutoCAD, ArcGIS
- **Tools** | Microsoft Office, Arduino, Git, 3D-Printing, Soldering, Oscilloscope

EXPERIENCE

Midnight Sun Solar Rayce Car Team   **Waterloo, ON**
Hardware PCB Developer   *Sep. 2023 - Present*

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

Marilake Academy   **Toronto, ON**
Mathematics Instructor   *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 with C++ and STM32CubeIDE to program the STM32 L476 microcontroller with its 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

Personal Portfolio | *SolidWorks, JavaScript, HTML, CSS, Git*

- Utilized HTML, CSS, JavaScript, and the SolidWorks API to showcase personal projects online
- SolidWorks designs include airplane, trampoline, capacitor, chair, cup and saucer

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 UofT Science Unlimited Design Challenge

Spear Knight | *Python, PyGame, Git*

- Animated, 3rd person shooter game with enemy-tracking, player-shooting, power-ups, and level-ups

Upcycled Briefcase and Roller | *Nails, Screws, Hammer, Screwdriver, Wood, Metal, Bearings, Saw, Joints*

- Designed and built a briefcase from an old monitor and a roller from old cabinets and broken lamps

ACHIEVEMENTS

Dragon Boat Canada   **ON, QC, Florida, Thailand**
18U Canadian National Team Paddler   *May 2018 - Present*

- Dedicated 15+ hours per week; won 1x Gold and 3x Silver for Team Canada 18U at the 2023 IDBF World Championships against China, Thailand, USA, Australia, Ukraine, and India
- Demonstrated coachability, maturity, and work ethic; designated the stroker of multiple U18/U24 teams

EDUCATION

University Of Waterloo   **Waterloo, ON**
BASc. Mechatronics Engineering | GPA: 95.14% (2x Dean's Honour List)   *Sep. 2023 - May 2028*
    Recipient of the First in Class Engineering Scholarship
    Relevant Courses: Algorithms and Data Structures (C++)