

Le Zhang

4A Honours Physics | Computing Minor

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Technical Skills

- **Programming:** C/C++, Python, C#, Java, React, TypeScript, HTML, CSS, JavaScript, SQL, Rust, Bash Scripting
- **Software:** Linux, Git, Visual Studio, Dreamweaver, Nginx, Apache, PyTorch, TensorFlow, Unity Engine
- **Emulation and Laboratory:** MATLAB, Matplotlib, LabVIEW, QuTiP, Comsol, Keil
- **Visual design:** Photoshop, Lightroom, After Effects, Premiere Pro, Final Cut Pro, Motion, Davinci Resolve

Experiences

Software Developer

University of Waterloo | Sept. 2024 – Dec. 2024

- Developed **Web APP** and **Web API** using the **ASP .NET core**, and optimized **SQL queries** based on **EF framework**
- Conducted comprehensive data testing to verify the accuracy, completeness, and consistency of data processed by endpoints, using **MStest**
- Collaborated with the Information System Specialist to develop software solutions supporting academic administration processes, focusing on delivering requirements to internal faculty and staff teams

Instructional Support Assistant

University of Waterloo | Jan. 2024 – April 2024

- Developed and implemented **shell scripts** for pre-compilation content verification, significantly reducing server computational demands
- Engineered **Python** and **C++** scripts for automated testing and result management of student assignment, slashing projects processing time from an average of **eight minutes to two seconds**
- Collaborated with fellow Instructional Support Assistants to enhance **teamwork** dynamics and **leadership** skills within the department

Web Developer

University of Waterloo | Sept. 2023 – Dec. 2023

- Managed website content using the University of Waterloo Development Kit, leveraging extensive **HTML**, **CSS**, and **JavaScript** knowledge
- Developed **Python** scripts to automate website accessibility checks through **multi-threaded**, enhancing efficiency and accuracy beyond manual methods
- Ensure website responsiveness and accessibility on various devices

Audio-visual Events Assistant

University of Waterloo | Jan. 2023 – April 2023

- Record and edit with professional video equipment/software **Final Cut Pro**
- Developed a **Python-based equipment management software** to streamline event setup processes
- Operated live PA systems and performed multi-channel audio mixing for various university events

Projects

CPU Emulation

2024

- Self designing a comprehensive **Python** simulation of **CPU** and **memory** operations, achieving a bitwise representation that accurately demonstrates underlying computer logic
- Engineered a comprehensive set of **CPU instruction sets**, enhancing the simulation's instructional utility
- Independently design the integration of peripheral systems including **memory management**, **I/O**, and a simplified **OS** with foundational **code compiler**

Website Develop and Server Maintenance

2022 – Present

- Developed and maintained a high-performance website, adeptly handling **concurrency** and **parallelism** through the integration of **HTML**, **CSS**, **JavaScript**, and **Nginx**, ensuring optimal user experience
- Established and managed a **MySQL** database system for efficient data processing and storage, supporting the website's dynamic content and user data requirements

Computational Physics Simulation

2021 – Present

- Build models using knowledge of physics and mathematics by **Python** and **C++**
- Develop multi-threads algorithms to improve simulation efficiency
- Validate simulation results and use visualizations by **Matplotlib**

Education

University of Waterloo

2020 – Present

- Candidate for Bachelor of Science, Honours Physics and Computing Minor

Activities and Awards

- Excellent Academic Standing | 2021-2024
 - First Robotic Competition – General Motor industrial design award | 2018
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