

# Le Zhang

3B Honours Physics | Computing Minor

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## Qualifications

- Proficient in **Python, C/C++, shell script**, and **git** for version control
  - Capable of **CUDA programming** uses **PyTorch** for deep learning model training
  - Master in web related programming **HTML, CSS, JavaScript** and **MySQL**
  - Skilled in audio and visual editing by **Photoshop, Final Cut Pro, Logic Pro** and **Davinci Resolve**
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## Experience

*Instructional support Assistant (CS136)* 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 project 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

*Website Maintainer* 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
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## 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 foundational components for a **C compiler** and **simplified OS**

*Classic Electrical Games Development* 2023

- Create classic electronic games featuring rich graphical user interfaces, utilizing the **Pygame** module within the **Python**. Like Tetris, Pac-Man, four connect and so on
- Enhanced game performance by developing high-efficiency game logic processing modules in **C/C++**, complemented by a seamlessly integrated **API** for **Python** development environments

*Website Develop & 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 experiences
  - Established and managed a **MySQL** database system for efficient data processing and storage, supporting the website's dynamic content and user data requirements
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## Education

*University of Waterloo* 2021-Present

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

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