Le Zhang

3B Honours Physics │ Computing Minor

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Technical Skills

– **Programming**: Python, C/C++, Bash Scripting , CUDA, C#, HTML, CSS, JavaScript, SQL (MySQL)
– **Software**: Linux, Git, Dreamweaver, Nginx, Apache, PyTorch, TensorFlow, Unity Engine
– **Emulation and Laboratory**: MATLAB, Matplotlib, LabVIEW, QuTiP, Comosol, Keil
– **Visual design**: Photoshop, Lightroom, After Effects, Premiere Pro, Final Cut Pro, Motion, Davinci Resolve

Experience

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**

Classic Electrical Games Development   2023
– Create classic electronic games featuring rich graphical user interfaces, utilizing the **Pygame** module within the **Python**
– 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 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 muti-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