Allison Zhao

 allison-stack   Allison Zhao   allisonzhao.uni@gmail.com   289-652-6900

EDUCATION

McMaster University   Sept 2022 – May 2027
Bachelor of Applied Science in Computer Science with Co-op   **4.0/4.0 GPA**

- **Achievements:** Deans' Honour List 2022-2025, McMaster University Award of Excellence, The Pollock Family Academic Grant

- **Relevant courses:** Software Development, Software Testing, Operating Systems, Computer Architecture

- **Extracurriculars:** Undergraduate Research Assistant, DeltaHacks VP Logistics, Google Developer Groups McMaster Open Source Developer, McMaster Quantum Key Distribution Lead Software Developer

SKILLS

Languages: Python, C/C++, JavaScript, Java, SQL, Haskell, HTML/CSS, Elm
Frameworks and Libraries: NextJS, React, Flask, Qiskit, TensorFlow, PyTorch, OpenCV
Tools: Git/GitHub, Bash, Shell Scripting, PostgreSQL, MySQL, Docker, Google Cloud, Cohere Playground, Postman

EXPERIENCE

DevOps Engineer   May 2025 – Present
Huawei Technologies Canada
- Automated on-demand benchmarking processes by developing robust **Bash scripts**, reducing test execution time by **40%**
- Designed and executed performance SQL benchmarking queries on GaussDB – an enterprise-grade distributed relational database, identifying optimal parameter configurations that improved query throughput by **15–20%**
- Implemented comprehensive regression test suites in **PostgreSQL** and robust unit tests in **C** for TaurusDB – a cloud-native relational database, ensuring feature stability and preventing performance regressions prior to production release

Undergraduate Research Assistant   May 2024 – Aug. 2024
McMaster University
- Architected and implemented a RISC-V backend in **Haskell** by formally modeling the instruction set semantics from the official specification
- Ensured correctness through rigorous testing and optimization for performance, creating a functional compiler for a modern Instruction Set Architecture
- Achieved a **26%** speedup in compiled code performance by optimizing the RISC-V backend, outperforming previous implementations for IBM Z and POWER architectures developed in the same codebase

Coding Mentor   May 2024 – Aug. 2024
STaBL Foundation
- Planned and hosted coding workshops in Elm (a domain-specific programming language for creating web browser-based graphical user interfaces) for **200+** students from local schools
- Delivered a curriculum that enabled **80%** of participants to successfully deploy their first creative coding project
- Secured a **85%** retention rate, with participants returning for advanced workshops and engaging in coding outside the sessions

PROJECTS

Rexflection | *Python, Flask, React, Cohere, Postman, Google Cloud*   Jan 2024
- Developed the core backend infrastructure using **Python** and **Flask** to efficiently handle data processing, user interactions, and drive narrative content generation
- Achieved **91%** accuracy in generating meaningful visual insights by combining the **YOLOv8** computer vision model for image analysis with the Cohere API for contextual summarization
- Boosted summary coherence by **20%** by refining NLP prompts in Cohere Playground and validated API reliability through extensive testing via **Postman**, successfully executing over 60 test cases