

Allison Zhao

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EDUCATION

McMaster University

Bachelor of Computer Science (Co-op)

Hamilton, ON

Sept 2022 – May 2026

- 3.9 GPA
- Relevant Coursework: Data Structures and Algorithms, Software Design, Introduction to Probability

EXPERIENCE

IBM CAS

Undergraduate Research Assistant

May 2023 – August 2023

IBM CAS 2023 Project of the Year, USRA

- Updated and implemented vector instructions in the existing Coconut repository using **Haskell** to ensure compatibility and optimal performance with the new POWER processor architecture
- Implemented and optimized the GELU activation function for IBM POWER processors, exceeding expected performance capabilities by **2x**
- Developed, integrated, and tested **single precision** elementary functions, optimizing mathematical operations for precision and efficiency on IBM POWER processors

STaBL Foundation

Coding Mentor

June 2023 – June 2023

- Planned and hosted coding workshops in Elm (a domain specific programming language for creating web browser-based graphical user interfaces) for **100+** students across several local school districts
- Coordinated with **30** instructors to curate workshop materials, incorporating hands-on exercises to increase participants' coding proficiency
- Fostered a collaborative learning environment, leading to a **70% improvement in participant satisfaction** based on post-workshop surveys

PROJECTS

EyeQ | *Python, HTML/CSS, Markdown, Taipy, Cohere, CockroachDB*

- **Lead frontend developer**, contributing to the design and creation of a visually appealing, and user-friendly interface for EyeQ – a learning tool that uses eye tracking technologies to facilitate learning
- Became proficient with **Taipy**, which was used to build the frontend/backend in the span of a few days
- Demonstrated strong project management skills by ensuring adherence to tight project timelines

Integral Visualizer | *Elm*

- Created a dynamic user interface for the integral visualizer that utilized the Riemann sum technique as its foundational principle
- Led and ensured that the team followed through on the **Design Thinking** process throughout prototype development
- **Helped 20+ peers** improve their understanding of integration and the Riemann sum technique

MacFAQChatBot | *Python, Google Cloud Functions, BigQuery, Dialogflow*

- Established a test database in **Google Cloud BigQuery**, extracting and structuring FAQ data from McMaster University's website
- Executed **SQL** queries using the BigQuery client to validate and test the responsiveness of the database, ensuring accurate and timely retrieval of data in alignment with project requirements

TECHNICAL SKILLS

Languages: Python, Haskell, C, Java, Elm, HTML, CSS, JavaScript/Typescript, SQL

Libraries and Frameworks: React, OpenCV, Taipy, Pytorch, TensorFlow, Bootstrap

Tools: GitHub, Git, Google Cloud Functions, BigQuery, Dialogflow, Cohere, CockroachDB, Bash