Ahmed Zafar

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Education

McMaster University — Hamilton, On

Major: Software Engineering; GPA: 3.8 — *Projected Graduation Date: April 2028*

- **Software Lead** @ McMaster Biomedical Engineering Technical Team, **Open Source** @ Google SDC McMaster
- **Teaching Assistant:** Teach **30+** students the engineering **design process, python programming, OOP,** and lead **6+ weekly design/code reviews** to ensure code is optimized and well documented
- **Relevant Courses:** Health Solutions Design Projects (Intro to Programming in Python), Object Oriented Programming in Java, Data Structures & Algorithms, Large System Design and Infrastructure, Databases

Experience

Co-Founder, Chief Technology Officer — Hamilton, On

Stoat — Machine Learning Deployment Platform — *April 2025 - Present*

- Building a service to **simplify machine learning model deployment** by enabling developers to **deploy from the command line**, **auto-scale** their computing resources, **generate RESTful APIs**, and **monitor** their deployment with **real-time logs**, and efficient **versioning**.
- Using **Vite.js, FastAPI, Docker, AWS EC2, AWS Sagemaker, Kubernetes, and PostgreSQL** to automate **infrastructure**, **scaling**, and **APIs**.
- Created a waitlist with **100+ engineers**, currently onboarding **beta users**, and incorporating their **feedback**

Software Engineering Intern — Hamilton, On

Arche Biotechnologies — *September 2024 - December 2024*

- Built and improved infrastructure of a **web-app prototype** and interfaced with the hardware team's sensor components to design a medical management device.
- Replaced inefficient HTTP requests with **Web-Sockets**, reducing data transfer latency by **94%**
- Designed **NOSQL** database architecture using **MongoDB** allowing clients store and securely retrieve **thousands** of patients information.

AI/ML Researcher and Fullstack Developer Intern — Hamilton, On

Biomedic.Ai Labs — *May 2024 - August 2024*

- Awarded National Sciences and Engineering Research Council's Undergraduate Student Research Award to research **Adaptive Cyber-Physical Systems** for **Human-AI partnership** within a surgical setting
- Delivered several **machine learning models** (**neural networks**, **random forest**, **SVM**) **from scratch** with a **average prediction accuracy of 92%** by processing data using **NumPy**, **Pandas**, and **TensorFlow**
- Completed **8 features** to the front-end and back-end of a fullstack project assessing the quality of machine learning being leveraged using the **MERN** stack, ensuring maintainability and scalability.
- Developed **REST API** endpoints, and conducted **back-end analytics** of user interactions.
- Wrote **4 pages of documentation and justification** of my technical contributions.

Projects

HackMe | *Python, JavaScript, React, Paramiko, nmap, Flask, OpenAI API*

- **WINNER** @ McMaster Engineering Competition (**500+** participants), allowing us to compete in the Ontario Engineering Competition.
- Developed a **B2B cybersecurity service** to find vulnerabilities in emerging start-ups and small businesses.
- Automated cyber-attacks such as **port scanning servers**, and **brute-force SSH testing** with **100%** coverage and potential to expand to more tests like **SQL Injections**.

Dash-Tab | *JavaScript, React, CSS, Figma, Firebase, Github Actions*

- Developed scalable architecture that handles **29 000+** reads from the database per month.
- Used Github Actions to create a **continuous integration pipeline** automate building and testing, catching **10+** errors and improving debugging efficiency.
- Incorporated **user feedback** to refine **12+ features** and ensure a **user-centric** software engineering process.

Languages and Technical Skills

Python, HTML, CSS, JavaScript, Java, C, C++, Bash, Verilog, TypeScript, Swift —— TensorFlow, Matplotlib, NumPy, Pandas, React.js, Linux, Git, GitHub, Express.js, Node.js, MongoDB, Flask, FastAPI, Firebase, Socket-io, Figma, Next.js, Vite.js, SQL, PostgreSQL, Docker, AWS, AWS EC2, AWS Lambda, AWS Sagemaker, Kubernetes