Edward Zhuang

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Education

McMaster University   *September 2019 - April 2024*
B.Eng. in Software Engineering (Co-op)   *Hamilton, ON*

- **Awards**: McMaster Honour Award, Dean's Honour List, Peter Milne Academic Grant
- **Relevant courses**: Data Structures and Algorithms, Concurrent System Design, Large Software Design, Databases, Data Mining

Experience

Software Engineer Intern   *May 2022 - April 2023*
National Bank of Canada   *Toronto, ON*

- Developed microservices and performed end-to-end testing for a securities trading software using **Java** and **Spring Boot**, satisfying business requirements for **100+** new features requested and used by **50+** traders
- Designed modules for daily notional value tracking by constructing new **SQL** tables and using **Java** and **Spring Data JPA** to facilitate database-repository connections, generating insights into different trade activities
- Implemented server-side infrastructure to facilitate the migration of the on-premises, monolithic application to **AWS**, adopting a microservices architecture using **Java** and **Spring Boot**, improving scalability and eliminating system downtime
- Aggregated and manipulated trade data in **SQL** for traders, allowing for pattern analysis on various trade activities
- Managed and maintained the health of **4** production and non-production **Jenkins** pipelines, fixing **40+** cases of pipeline failure

Web Developer Intern   *May 2021 - September 2021*
Ontario Ministry of Education   *Remote*

- Streamlined the Ontario curriculum website structure creation process by developing a **JavaScript (ES6)** script with **Node.js** and the **Kentico Kontent API**, reducing execution time by **95%**

Projects

ASLingo ↗   *September 2023 - April 2024*
Capstone Project   *McMaster Capstone Course*

- Developed a web platform for learning American Sign Language using computer vision featuring real-time practice and feedback
- Trained a linear neural network model to recognize common American Sign Language (ASL) hand signs using **PyTorch**, based on image recognition built in **OpenCV** with **Python**
- Designed a data processing pipeline backend in **Python** and a landmark-based hand sign recognition **machine learning model**
- Presented at the **McMaster Engineering Capstone Expo 2024** and got invited to feature at **May@Mac** to prospective students

AI Landscape Art NFT Generator ↗   *June 2023*
Hackathon Project   *ETHGlobal Waterloo 2023*

- Trained a diffusion AI model to generate landscape art NFTs on **Ethereum mainnet**, winning two prizes totalling **$1,000+** in value
- Developed a **Flask** web app to generate artworks, mint them into NFTs, and showcase recently minted ones on the **React** frontend, which features a login interface with authentication built upon the **Worldcoin API**

Opioid Patient Study ↗   *September 2021 - April 2022*
School Club Project   *McMaster AI Society*

- Implemented a **support vector machine (SVM)** to classify potential opioid addicts from patients in the Pharmacogenetics of Opioid Substitutions Treatment Response Study, in collaboration with the McMaster Faculty of Health Sciences
- Developed data cleaning **Python** scripts using **pandas**, reducing a noisy and inconsistent data set of **3000+** features to a clean data set with **< 400** features, minimizing the effects of overfitting
- Presented results to the **McMaster AI Projects Expo 2022** to a panel of **30+** professionals and students

Skills

Languages	Java, Python, JavaScript (ES6), SQL, MATLAB, HTML, CSS
Frameworks	Spring Boot, React, Node.js, Flask, Bootstrap, PostgreSQL, pandas, NumPy, Scikit-learn, PyTorch
Other Technologies	Git, Atlassian, AWS, Jenkins, Ethereum, Linux, Microsoft Excel