Ethan Qiu

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Education

University of Toronto Sep. 2024 - Present
Bachelor's of Science - Computer Science Specialist

Experience

Software Engineer (Co-op) May 2025 – Present
General Dynamics Mission Systems–Canada

- Built and maintained **Java** applications used in battle planning systems, applying **Maven** for build automation in production environments.
- Developed **Python** test automation for simulated and lab-based validation of field hardware components.
- Collaborated in an **agile** team using **Git** and **GitLab** for source control, code reviews, and **CI/CD**.

Full Stack Developer May 2025 – Present
University of Toronto Machine Intelligence Student Team (UTMIST)

- Developed and maintained full-stack features using **Django (Python)** for RESTful APIs, **React** for dynamic frontends, and **PostgreSQL** for database management.
- Managed codebase using **GitHub** with structured branching and peer reviews; leveraged **CI/CD** workflows for real-time preview environments and continuous deployment.
- Contributed to infrastructure serving **1,000+** students and researchers with high uptime and fast iteration cycles.

Tournaments Director Sep. 2024 – Present
Hart House Debating Club

- Lead a team of **20+** organizers, incorporating their diverse perspectives into the decision-making process.
- Implement **Python** and **JavaScript**-based solutions to complex problems, reducing team turnaround times on key deliverables by **25%**.
- Organize events for **360+** students, delivering a **91%** participant satisfaction rate and exceeding revenue targets by **$7000**.

Projects

AI-Powered Pedestrian Safety Solution | *Python, Javascript, Pytorch, React, Django*

- Created machine learning model and back-end using **PyTorch** and **Django** to detect pedestrians using phones while crossing with an **85% accuracy rate**.
- Integrated **OpenCV** for real-time image processing and pedestrian tracking, ensuring low-latency detection.
- Developed a front-end dashboard with **React (JS and TypeScript)** for real-time monitoring.

AI Navigation System for Visually Impaired Users | *Python, Pytorch, OpenCV*

- Built a **PyTorch** model to detect landmarks and signs with **80% accuracy**, completing the full ML pipeline including data collection, preprocessing, augmentation, and training.
- Integrated real-time speech-to-text and text-to-speech for seamless voice-based navigation and interaction.
- Used **OpenCV** to process live video input and feed visual data into the detection pipeline for real-time scene interpretation.

Hart House Tournament Automation | *Python, REST API, Git*

- Developed **Python**-based automation solutions to manage critical information for **360** participants per event, achieving an **8-hour** reduction in manual workload per tournament.
- Engineered distributed workflow automation integrating multiple APIs (**Google Sheets**, Drive, TabbyCat) to synchronize real-time tournament data.
- Implemented version control with **Git** and **GitHub**, adhering to best practices.

Technical Skills

Languages: Java, Python, JavaScript, TypeScript, C/C++, PostgreSQL, HTML/CSS
Frameworks: React, Django, Node.js
Developer Tools: Docker, Git, GitLab, GitHub, Firebase, Google Cloud Platform
Libraries: PyTorch, Tensorflow, pandas, NumPy
Concepts: Agile, SAFe, REST APIs, CI/CD, Distributed Systems, Version Control