Andrew Wu

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Education

McMaster University *Hamilton, Ontario*
B. Eng in Software Engineering *May 2029*
- 4.0 GPA

Experience

McMaster Artificial Intelligence Society | *Software Developer* Oct 2025 – present
- Developed a **Next.js + FastAPI** web application that performs real-time deepfake detection from user uploads
- Deployed the ML inference pipeline using **Docker**, **Kubernetes**, **NGNIX**, and **Redis**, supporting low-laatency, scalable inference

Google Developer Groups | *Open Source Developer* Sept 2025 – present
- Built a real-time **React + Chrome Manifest V3** extension interface enabling natural language web automation
- Implemented **FastAPI + WebSockets** and **OCR-assisted** DOM parsing, improving interaction reliability by **30%** and enabling live agent reasoning

McMaster Solar Car Project | *Full Stack Developer* Sept 2025 – present
- Deployed an **LGTM observability stack** (Loki, Grafana, Tempo, Mimir) with **OpenTelemetry** and **GitHub Actions CI/CD** to monitor team-operated web services
- Implemented robust error handling via **FastAPI** and **Jinja2**, improving platform reliability

McMaster Exoskeleton | *Software Developer* Sept 2025 – present
- Developed and integrated an **TCN**-based gait prediction algorithm with **PyTorch**, achieving **85% accuracy** ($\pm 5°$) in estimating joint angles from IMU sensor data

Projects

GenUI – *Self-Evolving AI Storefront* Jan 2026
- Built a real-time, adaptive storefront that dynamically reconfigures UI layouts from live user behaviour, winning **Best Beginner Hacks** and **Backboard.io Runner Up** at UofTHacks 13
- Architected a low-latency, event-driven backend using **FastAPI**, **Server-Sent Events**, **Redis**, and **MongoDB** to ingest high-frequency telemetry and drive real-time UI decisions with sub-second end-to-end updates
- Designed a **LangGraph-based multi-agent orchestration layer** to infer user intent and automate A/B experimentation

Waypoint – *Search & Rescue Prediction System* Jan 2026
- Built an interactive predictive visualization platform with **React** to empower data-driven SAR decision-making
- Deployed **FastAPI-based** geospatial simulation pipelines modeling 1,000+ parallel autonomous agents, incorporating terrain features and ISRID-informed behavioral strategies
- Implemented **multi-tile local LRU caching**, mitigating external API rate limits and improving simulation throughput by 35% versus cold starts

NewNews – *AI-powered News Summarizer* Sept 2025
- Developed GPT-4-powered news platform, delivering concise insights on trending tech articles
- Implemented **Express/Node.js** backend with a **PostgreSQL** database, optimizing query performance and clustering articles via **k-means**, displayed through a responsive **Next.js** frontend for personalized feeds and live topic updates
- Automated data pipeline in **Python** to scrape and preprocess **500+** articles, reducing manual curation time by **90%**

Skills

Languages: Python, TypeScript, JavaScript, Java, HTML/CSS, SQL, C++, C

Technologies/Frameworks: Next.js, React, Node.js, Express.js, PostgreSQL, MySQL, Git, Postman, Docker, Kubernetes, Agile Development, Linux, Networking, GCP, Azure

Libraries: FastAPI, Pydantic, scikit-learn, Matplotlib, NumPy, Pandas