

Andrew Wu

📍 Hamilton, Ontario | ✉ andrewwuca@gmail.com | ☎ (647) 451-7652 | 🌐 andrewwu13 | 🌐 andrew-wu13

Education

McMaster University, in Engineering – Hamilton, Ontario

Sept 2025 – present

St. Robert Catholic High School, in IB Diploma

Sept 2021 – June 2025

- GPA: 4.0 (97%)

Skills

Languages: Python, JavaScript, TypeScript, Java, C

Technologies/Frameworks: React, HTML/CSS, Git, MySQL, PostgreSQL, Node.js, Express

Libraries: Pandas, NumPy, Matplotlib, scikit-learn

Projects

AI-Powered News Summarization Platform

Sept 2025

- Built a full-stack web application that automatically summarizes and curates news articles using LLM-based NLP pipelines.
- Improved UI/UX and shipped production-ready features with React (lazy-loading feed, refresh functionality, scalable backend APIs)
- Integrated SQL-backed storage system to manage articles and metadata, enabling efficient retrieval and filtering.

Optimization via Gradient Descent

Nov 2024

- Implemented a scalable gradient descent algorithm to minimize cost functions, achieving optimized solutions for regression models and facility location problems
- Reduced computation time by applying vectorized operations in NumPy, demonstrating efficiency improvements in optimization workflows.

Dynamic System Simulation (Wilberforce Pendulum)

Feb 2025

- Built a computational physics simulation solving nonlinear differential equations to model pendulum motion.
- Designed data visualization pipeline with Matplotlib, producing clear, interpretable insights on oscillatory and rotational dynamics.

Research Project: Biomechanical Landing Optimization

Sept 2023

- Conducted research analyzing how variations in human landing techniques affect stress on musculoskeletal systems.
- Applied statistical and computational methods to interpret results; authored a research paper synthesizing findings with potential applications in sports science and injury prevention.

Experience

Media Executive, Student Athletic Council, St. Robert CHS

Sept 2021 – June 2025

- Produced and managed digital media strategy for school athletics, generating 200,000+ engagements in one year through sports highlight reels and social campaigns.
- Collaborated with cross-functional teams to build community engagement, demonstrating leadership and project management skills.

Camp Counsellor, Muskoka Woods Summer Camp

Sept 2023 – Sept 2023

- Led 20+ high school campers in daily activities, ensuring safety, teamwork, and problem-solving in high-pressure environments

Center Assistant, Kumon Institute Education

Aug 2021 – May 2022

- Tutored math/reading, strengthening communication and clarity in teaching

Certifications and Achievements

- Canadian Youth Physicist's Tournament Gold Medal | IYPT
- Certified B1 French Speaker | Diplôme D'études En Langue Française
- Sports Medicine ILC Qualifier | HOSA SLC