Martin Wu

236-518-9477 | martinwu500@gmail.com | martinwu.tech | LinkedIn | GitHub

Education

University of British Columbia **Sep 2025 – 2029**
Bachelor of Applied Science in Engineering *Vancouver, BC*

Technical Skills

Languages: Python, C, C++, JavaScript, TypeScript, Java, HTML/CSS, SQL
Frameworks & Tools: React, Flask, NumPy, Git, GitHub Actions, InfluxDB, Grafana
Embedded & Hardware: STM32, SPI, CAN bus, HAL drivers, PT1000 RTD sensors, MAX31865

Experience

Co-Founder & Software Engineer **Dec 2025 – Present**
AI/ML Startup (Seed Round) *Vancouver, BC*

- Developing LLM optimization software enabling inference on low-RAM consumer hardware
- Building downloadable product with memory-efficient model loading and inference pipeline
- Contributing to technical architecture and product development in seed-stage startup environment

Embedded Systems Engineer **Sep 2025 – Present**
UBC Solar *Vancouver, BC*

- Engineered PT1000 RTD temperature sensing system with MAX31865 breakout board after motor failure at competition revealed telemetry blind spots; wired and integrated hardware to driver dashboard
- Developed STM32 firmware in C implementing SPI communication to configure MAX31865 registers, initialize sensor parameters, and convert raw ADC readings to accurate temperature data
- Integrated sensor data over CAN bus to driver dashboard for real-time monitoring independent of telemetry
- Configured InfluxDB and Grafana data visualization via Sunlink radio system for live vehicle diagnostics
- Currently developing external lighting control system with driver dashboard button integration

Projects

Portfolio Website | *HTML/CSS/JavaScript, GitHub Actions* **2025**

- Built responsive personal portfolio with dark/light theme toggle and scroll-triggered animations
- Implemented CSS custom properties for dynamic theming and optimized performance with efficient animations
- Automated deployment pipeline with GitHub Actions for continuous delivery to martinwu.tech

Useful Tool Hub | *Python Flask, JavaScript, yt-dlp, Instaloader* **2025 – Present**

- Built full-stack web application with Python Flask backend APIs for media downloading functionality
- Integrated yt-dlp and Instaloader libraries for Instagram carousel and YouTube video extraction with format selection
- Deployed on GitHub Pages with serverless architecture; live at martinw500.github.io/Useful-Tool-Hub

Algorithmic Trading System | *Pinescript v6, Python, TradingView* **Q1 – Q3 2025**

- Developed quantitative trading strategies achieving 179% growth in backtesting with alpha of 1.05%
- Implemented separate long and short strategies yielding 8.3% Q1 and 12.4% Q2 portfolio growth
- Built Python integration for data analysis and strategy validation across 7-year historical dataset

Math Quiz Generator | *React, MathJax, Python Flask, GitHub Actions* **2024**

- Developed quiz platform with adaptive difficulty scaling and weighted operation selection across 10 levels
- Integrated MathJax for mathematical notation rendering; deployed via GitHub Actions to GitHub Pages

Haar Wavelet Image Compressor | *Python, NumPy, Pillow, CustomTkinter* **2024**

- Implemented Haar wavelet transform algorithm for lossy RGB image compression using NumPy matrix operations
- Built desktop GUI with CustomTkinter enabling real-time compression parameter adjustment and visual comparison

Awards & Achievements

Mathematics Competition Awards **2023 – 2025**

- **Canadian Senior Mathematics Contest:** Top 0.5% (71st place) with score of 52/60
- **AIME Qualifier (2x):** Top 5% on AMC 12 A & B with score of 118.5
- **Euclid Contest:** Top 2% with score of 85