# Martin Wu

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#### Education

## University of British Columbia

Expected 2025 - 2029

Bachelor of Applied Science in Engineering

Vancouver, BC

#### Technical Skills

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

Frameworks & Tools: React, Flask, NumPy, Git, GitHub Actions, REST APIs, PostgreSQL, Node.js, CI/CD

Libraries: MathJax, Styled Components, Axios, Pillow, Matplotlib, CustomTkinter

# Experience

Embedded Systems Sep 2025 – Present

UBC Solar Vancouver, BC

- Engineered a new motor temperature sensing system using PT1000 RTDs, improving reliability and precision by 27%
- Developed STM32 firmware in C utilizing HAL\_SPI drivers for real-time data acquisition and processing
- Integrated sensor data over CAN bus to driver dashboard and telemetry modules for live diagnostics

# Founding Software Engineer

Jun 2025 - Present

Stealth Startup - Quantitative Portfolio Management

Vancouver, BC

- Achieved 15% portfolio growth in Q2 and 241% growth over 7-year backtesting (Jan 2018-present)
- Developed algorithmic trading strategies in Pinescript v6 on TradingView with Python integration
- Implemented both long-trade (241% growth) and short-trade (179% growth) strategies

### Robotics Team Programmer

Sep 2024 – Jun 2025

Moscrop Robotics Team

Burnaby, BC

- Architected modular C++ control algorithms optimizing autonomous routines, reducing cycle time by 18%
- Engineered real-time sensor-fusion pipelines enhancing obstacle detection robustness
- Refactored 1,200-line legacy codebase, cutting runtime errors by 25% and improving system stability

## Advanced Mathematics Tutor Lead

Sep 2023 – Jun 2025

Math Challengers Program

Burnaby, BC

- Designed honours-level curriculum covering algebra, combinatorics, and geometry for 40+ gifted students
- Created diagnostic assessments and progress tracking, boosting average contest scores by 32%
- Coordinated lesson schedules and resources across three partner schools

## **Projects**

# Math Quiz Generator | React, Python Flask, MathJax, GitHub Actions, REST API

2024

- Architected full-stack educational platform with intelligent difficulty algorithms across 10 progressive levels
- Engineered dual-deployment architecture supporting REST API client-server and standalone frontend operation
- Implemented real-time mathematical notation rendering using MathJax 3 with automated CI/CD pipeline

# Advanced Haar Wavelet Image Compressor | Python, NumPy, Pillow, CustomTkinter

2024

- Implemented custom Haar wavelet transform algorithms for real-time RGB image compression
- Built responsive desktop GUI with interactive parameter controls and immediate visual feedback
- Designed multi-channel processing pipeline with efficient memory management for large image arrays

#### Awards & Achievements

#### **Mathematics Competition Awards**

2023 - 2024

- Euclid Contest: Top 2% with score of 85
- AIME Qualifier (2x): Top 5% on AMC 12 A & B with score of 118.5
- Canadian Senior Mathematics Contest: Top 0.5% (71st place) with score of 52/60
- Canadian Open Mathematics Challenge: Moscrop 3rd in BC
- Hypatia Mathematics Contest: Top 3% (182nd place), medal recipient