

Wilson Wan

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Education

University of Illinois Urbana-Champaign

MASTER OF COMPUTER SCIENCE (MCS)

- Teaching Assistant, CS 447 (Spring 2026)

Urbana-Champaign, IL, USA

Sep. 2025 - Present

University of Waterloo

BACHELOR OF COMPUTER SCIENCE (BCS)

- Dean's Honours (CAV $\geq$ 87%)
- Upper-Year Mentor (2024 & 2025); Math Faculty Tutor & Marker (2022); Varsity Athletics Tutor (2022)
- Ops Lead (KWCSSA); Esports Team Coach (League of Legends Division)

Waterloo, ON, Canada

Sep. 2020 - Jun. 2025

Skills

Programming C++, Python, C, JavaScript, SQL

ML & Quant PyTorch, TensorFlow, NumPy, Pandas, Scikit-learn, FAISS, Backtesting, Low-Latency Systems, Multithreading

Engineering & Tools Linux, Git, CMake, Docker, Codex, Claude Code, Node.js, Qt, AWS, MySQL

Work Experience

Century Frontier Asset Management

QUANTITATIVE DEVELOPER INTERN

- Developed high-frequency backtesting infrastructure for replaying market data and evaluating trading strategies.
- Built and validated order book reconstruction and matching components for exchange-level execution simulation.
- Worked on market-impact-aware simulation to model order placement, cancellation, and execution against historical markets.

Shanghai, China

Jul. 2026 - Present

Kendall Square Capital

QUANTITATIVE DEVELOPER INTERN

- Developed components for a quantitative research platform, covering data processing, model experimentation, and analysis workflows.
- Built and optimized Python modules for multidimensional data operations and research model inference.

Shanghai, China

May. 2026 - Jun. 2026

First National Financial Corporation

QUALITY ASSURANCE AUTOMATION ENGINEER (CO-OP)

- Built JavaScript automated test suites for internal financial systems, covering functional testing and system integration workflows.
- Developed validation scripts and test pipelines to improve API testing, regression testing, and issue reproduction efficiency.

Toronto, ON, Canada

Sep. 2024 - Dec. 2024

Dalian Institute of Chemical Physics, Chinese Academy of Sciences

AI RESEARCH ENGINEER (CO-OP)

- Built a Python/PyTorch fast-charging simulator using a single-particle thermal model for voltage and temperature dynamics.
- Formulated charging as an RL control problem, designing states, actions, and rewards for safe current policy learning.
- Evaluated policies under temperature, voltage, and degradation constraints, reducing charging time by approximately 17%.

Dalian, China

Jun. 2024 - Aug. 2024

Guspro Inc.

EMBEDDED SOFTWARE ENGINEER (CO-OP)

- Developed control software for an automated skate sharpening machine using C++, Qt, LinuxCNC, and embedded Python.
- Migrated SciPy B-spline curve fitting logic to C++, reducing Python runtime dependency and lowering processing time from 5s to 1s.
- Implemented Savitzky-Golay filtering and Procrustes analysis for blade profile denoising, shape alignment, and detection stability.

Chatham, ON, Canada

Sep. 2023 - Dec. 2023

Peraso Technologies

AUTOMATION SOFTWARE DEVELOPER (CO-OP)

- Maintained JavaScript/C++ test frameworks for wireless chips, automating device setup, parameter configuration, and test execution.
- Built log parsing and result aggregation tools to assist failure diagnosis and improve regression testing efficiency.

Toronto, ON, Canada

Jan. 2023 - Apr. 2023

Projects

AI Commerce Agent 🔄

- Built a full-stack AI shopping assistant supporting natural language product search, image retrieval, and multimodal recommendation.
- Used OpenAI embeddings, CLIP, and FAISS for text/image retrieval, with keyword matching and reranking to improve recall.

AlphaForge 🔄

- Built a daily equity research framework for testing price-based signals, feature processing methods & portfolio construction rules.
- Implemented momentum, mean-reversion, and trend signals, evaluated with IC, Rank IC, grouped returns, turnover, and drawdown.

CNN vs Vision Transformer Study 🔄

- Built a unified PyTorch training framework to compare ResNet-18 and ViT-B/16 on image classification tasks.
- Analyzed training dynamics using Neural Tangent Kernel analysis and feature-rank measurements of intermediate representations.