Zihan Wu

PhD Candidate, Electrical Engineering, City University of Hong Kong

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SUMMARY

PhD candidate in Electrical Engineering, expected to graduate in Aug 2025, with expertise in mathematical modeling, statistical analysis, and quantitative research. Experienced in developing and implementing trading models, reinforcement learning algorithms, and high-performance computational systems. Strong background in probability, statistics, and machine learning with published research in distributed systems, clustering algorithms, and model optimization. Proven ability to translate complex mathematical models into production code and conduct independent research in data-driven environments.

EDUCATION

City University of Hong Kong, Ph.D. in Electrical Engineering　　　　　　　　　**Hong Kong SAR, China**
2020 – 2025 (Expected)

University of Science and Technology of China, B.Sc. in Physics & Applied Mathematics　　　**Hefei, China**
2015 – 2020

EXPERIENCE

Huawei Technologies, Research Intern　　　　　　　　　　　　　　　　　　　　　　**Hong Kong**
Developing LLM optimization techniques for enterprise AI with focus on performance efficiency　　2025 – Present

PROJECTS

Rust, Python, PPO, Streamlit, Binance API　　　**BTC Trader: Real-Time Crypto Trading System (Independent)**
2023 – 2025

- Developed mathematical models for cryptocurrency price prediction using reinforcement learning and statistical analysis
- Implemented and backtested quantitative trading strategies achieving 4.08% return with Sharpe ratio 1.42
- Built real-time signal generation system processing market microstructure data with sub-millisecond latency
- Created comprehensive backtesting framework for strategy validation and risk assessment

C++, Distributed Systems, Performance Engineering　　　**X-Shard: Distributed Transaction Engine**
2023 – 2024

- Developed mathematical models for distributed consensus achieving 37% latency reduction through algorithmic optimization
- Applied statistical techniques and predictive modeling to optimize system performance in high-frequency environments
- Published: IEEE Trans. on Parallel and Distributed Systems, 2024

C++, Rust (FFI), MPI, Optimization　　　　　　　**High-Performance Co-Clustering System**
2020 – Present

- Developed novel statistical clustering algorithms for large-scale data analysis on 800K+ document corpus
- Applied advanced pattern recognition techniques to extract hidden structures from complex, noisy financial datasets
- Implemented high-performance computational models achieving 83% runtime improvement through algorithmic optimization
- Published in IEEE SMC 2024 and IEEE TIM

C++, PyTorch, CUDA　　　　　　　　　　　　　**LMEraser: Fast Transformer Optimization**
2023 – Present

- Developed mathematical frameworks for transformer model optimization using statistical learning theory
- Applied advanced optimization techniques to 86M+ parameter models achieving 100x performance improvement
- Conducted rigorous statistical analysis and validation; research accepted at top-tier venue (AISTATS 2025)

SKILLS

Mathematical & Statistical: Probability Theory, Statistical Analysis, Time-Series Analysis, Pattern Recognition, Machine Learning, Optimization Theory

Programming Languages: Python (NumPy, Pandas, Scikit-learn), C++ (Low-latency), R, MATLAB, Rust

Quantitative Research: Trading Model Development, Backtesting, Signal Generation, Risk Management, Reinforcement Learning (PPO), Statistical Arbitrage

Data & Systems: Large-scale Data Processing, Distributed Computing, Real-time Analytics, HPC (MPI, CUDA), Financial Data APIs

AWARDS

HK PhD Fellowship (Top 5% acceptance)　　　　　　　　　　　　　　　　　　　　　2020–2024
National Encouragement Scholarship (Top 2%)　　　　　　　　　　　　　　　　　　　2017–2018
Patent: Physical Activity Assessment System: *HK30081186*　　　　　　　　　　　　　2023