

Zihan Wu

📍 PhD Candidate, Electrical Engineering, City University of Hong Kong

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SUMMARY

PhD candidate in Electrical Engineering with a strong foundation in high-performance computing, algorithmic optimization, and low-latency system design. Experienced in building real-time trading infrastructure, reinforcement learning pipelines, and distributed engines across C++, Rust, and Python. Demonstrated independent research through self-directed quant projects and published work on distributed consensus, clustering systems, and transformer optimization. Eager to apply hybrid strengths in systems engineering and ML to quantitative research and infrastructure roles.

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 <i>Developing LLM optimization techniques for enterprise AI with focus on performance efficiency</i>	Hong Kong 2025 – Present
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PROJECTS

Rust, Python, PPO, Streamlit, Binance API	BTC Trader: Real-Time Crypto Trading System (Independent) 2023 – 2025
<ul style="list-style-type: none">Built a real-time crypto trading engine using Rust for execution and Python for RL-based signal generation and monitoringIntegrated PPO reinforcement learning strategy; achieved 4.08% backtest return with Sharpe ratio 1.42 under risk limitsImplemented sub-millisecond latency core, real-time dashboard (Streamlit), and modular backtest/live/train pipelineDockerized deployment with CI/CD support; served as a personal quant research sandbox	
C++, Distributed Systems, Performance Engineering	X-Shard: Distributed Transaction Engine 2023 – 2024
<ul style="list-style-type: none">Reduced transaction latency by 37% via cross-shard scheduling and commit path optimizationOptimized transaction execution path in a sharded blockchain by minimizing branch mispredictions via path classification and memory-aligned data layoutImplemented $O(n)$ threshold signature scheme for fast consensus under network partitionPublished: IEEE Trans. on Parallel and Distributed Systems, 2024	
C++, Rust (FFI), MPI, Optimization	High-Performance Co-Clustering System 2020 – Present
<ul style="list-style-type: none">Parallelized co-clustering on 800K+ documents via MPI; achieved 83% runtime reductionBuilt Rust orchestrator over C++ HPC core with safe FFI and nanosecond-level latency controlApplied unsupervised clustering and geometry-aware pattern recognition to extract latent structures from noisy datasetsPublished in IEEE SMC 2024 and IEEE TIM	
C++, PyTorch, CUDA	LMEraser: Fast Transformer Optimization 2023 – Present
<ul style="list-style-type: none">Accelerated model unlearning by 100x using adaptive prompt tuning and memory optimizationOptimized 86M+ parameter transformer models for deployment without performance lossTo appear at AISTATS 2025	

SKILLS

Programming Languages: C++ (Advanced, Low-latency), Python (Data/ML), Rust (FFI, Systems), C, MATLAB
Systems & HPC: MPI, OpenMP, CUDA, Distributed Systems, Real-Time Processing, Linux, Docker
Quant & ML: PPO, Reinforcement Learning, Model Compression, Algorithm Design, Statistical Modeling, Co-Clustering, Signal Processing
Tools & Infra: PyTorch, TensorFlow, Streamlit, GitHub Actions, OpenCV, Prometheus, Justfile, CI/CD

AWARDS

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