

Choi Hei Wang (Oscar)

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EDUCATION

The Chinese University of Hong Kong Hong Kong
B.Sc. in Computer Science; Minors: Data Analytics and Informatics, Business Aug 2023 – Expected Jul 2027

- Relevant courses: Compiler Construction (A), Operating Systems, Algorithms, Data Structures, Computer Organization, Probability, Statistics, Linear Algebra; current: Quantitative Methods for Financial Derivatives, Quantum Computer Systems (postgraduate)
- Final-year project (Prof. XU Hong): co-developed Bayesian scoring and conformal risk control for a 4B LLM; reduced tasks with rule violations ~80% versus a prompted agent on a held-out synthetic tool-use testbed

EXPERIENCE

CUHK Quant Trading Society Jan 2026 – Present
Lead Developer, Quant Research Team Hong Kong

- As the team's sole developer, architected its market-data platform: 700B+ stored A-share and crypto rows (5 Oct 2026 snapshot), plus Polymarket support
- Built a Python/HTTP/SQL query service with version-pinned reads; verified concurrent appends and partition rewrites without data loss on a small test dataset
- Removed duplicate records and added point-in-time checks to prevent look-ahead leakage into research data
- Built PAM/eBPF access controls in C and monitoring for shared research infrastructure; implemented a Go HTTP/WebSocket market-data relay with request validation and address scrubbing

WorldQuant BRAIN Jun 2025 – Present
Research Consultant, Gold level Remote

- Researched and submitted 11 equity alphas (best individual out-of-sample Sharpe 2.18 in BRAIN simulation); built Python tools for bounded simulation queues and checkpoint/resume

COMPETITIONS

IMC Prosperity 4 (Team SHDC) 2026
904th globally

- Team of 3: coded the final two rounds and checked the team's results; market making with Kalman/OU fair values plus relative-value trading

Hong Kong Universities Web3 Quant Trading Hackathon 2025
Initiated the project; lead architect

MonsoonSIM Enterprise Resource Management Competition 2025
3rd place

PROJECTS

Self-directed; designed and verified by me, implemented with AI coding agents (Claude Code, Codex).

AI Quant Research System | *Python, Claude Code, C++20* 2026

- Built a Python quant-research library from a textbook using AI coding agents, linking implementations to cited source claims and reproducible tests in a versioned vault
- Built a C++20/pybind11 replay backend: ~2.3× faster than Python batch for 64 queries on 100k preloaded synthetic messages, including Python conversion; byte-identical output

GPU Backend for FatQat (open-source quantum simulator) | *Python, CUDA (CuPy)* 2026

- Added API-compatible CUDA execution: 17–21× faster than a compiled 32-thread CPU engine for warm complex128 24–28-qubit statevector observables, simplification off; checked double precision separately on small circuits against a high-precision reference; separate CPU-worker fix merged upstream

Formulaic Alpha Search (GP) | *Python, genetic programming* 2026

- Evaluated genetic programming for formulaic alpha search on multi-year public Binance data across 34 crypto assets, with pre-registered train/validation/test splits, delay-1 signals, trading costs and an equal-budget random-search control

TECHNICAL SKILLS

Languages: Python, C++, C, Go, SQL, Java
Data & Systems: DuckDB, Apache Arrow/Parquet, SQLite, Linux, Docker, Git
Quant, ML & AI: NumPy, pandas, PyTorch, Qlib, Claude Code, Codex; factor research, market microstructure
Spoken: Cantonese (native), English (fluent), Mandarin (fluent)