PAK MING CHEUNG

Head of Quants · AI-Powered Algorithmic Trading · Senior Technical Architect

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LinkedIn

PROFESSIONAL SUMMARY

AI Engineer, Quantitative Developer, and Technical Architect with an MSc in Computer Science (AI & Data Science, Merit) from the University of Wolverhampton. Currently Head of Quants at Quant Sigma, London, leading institutional-grade HFT operations across Forex, CFDs, indices, and cryptocurrency markets while architecting production-grade AI systems for trading intelligence and execution.

Proven track record building scalable trading platforms, deploying production ML systems processing millions of predictions daily, and developing high-frequency trading infrastructure with sub-millisecond latency. Expert in LLM integration, RAG architectures, transformer-based predictive models, and full-stack development. Over a decade of systematic trading, scaling capital 20x+ with ~100% annualised returns.

CORE TECHNICAL COMPETENCIES

AI & Machine Learning
GPT-5, Claude, Gemini, LangChain, RAG, PyTorch, TensorFlow, Hugging Face, XGBoost, LightGBM, LSTM/GRU, RL, MLOps

Programming & Frameworks
Python, C++, TypeScript, React/Next.js, FastAPI, Node.js, MQL5, PostgreSQL, TimescaleDB

Blockchain & Crypto
DeFi, Binance, Bybit, Glassnode, Solidity, Cross-Exchange Arbitrage, On-Chain Analytics

Quantitative Trading & HFT
HFT, FIX API, iLink, Colocation (CME Aurora, Equinix LD4), QuantConnect, MT5, CCXT, Stat Arb

Infrastructure & DevOps
AWS, Docker, Kubernetes, CI/CD, GCP, Redis, MongoDB, InfluxDB, Vercel

Data Engineering
PostgreSQL, TimescaleDB, Redis, MongoDB, Vector DBs, Pandas, NumPy, ETL, Airflow

PROFESSIONAL EXPERIENCE

Head of Quants | AI & Trading Systems Architect

Quant Sigma, London

London, UK • December 2023 – Present

Leading quantitative research, AI-powered trading systems, and execution infrastructure for institutional-grade HFT across traditional and crypto markets.

QUANTITATIVE STRATEGY & RESEARCH
- Developed multi-signal HFT models: trend following, mean reversion, volatility breakout across Forex, CFDs, indices, crypto
- Implemented transformer-based predictive models for market direction forecasting (significant Sharpe ratio improvement)
- Built reinforcement learning execution system for adaptive position sizing
- Achieved **~100% annualised returns** through volatility-based position sizing and scenario testing

TRADING INFRASTRUCTURE
- Architected low-latency execution infrastructure with millisecond performance, colocation at CME Aurora and Equinix LD4
- Comprehensive backtesting framework: 5+ years tick-level data, transaction cost modelling
- Distributed ML inference pipeline: **<100ms latency** for real-time signal generation
- Automated risk management: real-time portfolio monitoring, volatility targeting, drawdown controls

AI & ML ENGINEERING
- Built AI-assisted decision workflows using LLMs with RAG for trading research and market intelligence
- NLP sentiment analysis engine processing **500K+ articles**, social media, alternative data daily
- Automated feature engineering pipeline: 100+ technical indicators, microstructure metrics
- Established MLOps practices: model versioning, evaluation, deployment, monitoring

SOFTWARE ENGINEERING & PLATFORM
- Architected FastAPI microservices, PostgreSQL/TimescaleDB time-series storage, Redis caching
- Docker/AWS deployment for scalable, production-grade trading infrastructure

`Python` `C++` `PyTorch` `TensorFlow` `FastAPI` `PostgreSQL` `Redis` `TimescaleDB` `Docker` `AWS` `MT5` `CCXT` `LLM APIs` `RAG`

Quant and Algorithmic Trader

Pacific Cloud Computing Ltd.

Hong Kong & Remote UK • January 2015 – November 2024

- Achieved Sharpe ratio **1.5+ (Forex/CFDs)** and **2–6 (crypto)**, generating 20x+ profit
- Applied risk management using Python for predictive models and portfolio optimisation
- Backtesting using MT4/5 and Python-based automation with AI-powered insights
- Blockchain expertise: DeFi protocols, yield farming, cross-chain arbitrage strategies

`Python` `MT4/MT5` `Expert Advisors` `Binance API` `TradingView` `Glassnode`

Senior Product Manager (Technical) / Web Manager
Groupon.com, Hong Kong

April 2013 – December 2014
- Led strategic account management, international merchant coordination, brand positioning
- Project planning, cost estimation, resource allocation, supply chain management

Senior Operations Manager
SoManyCall Telecom, Hong Kong

March 2008 – April 2013
- Achieved **25% annual growth rate** through strategic leadership
- Led multi-disciplinary team, managed full project lifecycle for custom software

NOTABLE ACHIEVEMENTS

Systematic Trading (2013 – Present)
- Scaled trading capital **20x+** over a decade of systematic trading
- **~100% annualised returns** depending on market conditions
- Controlled drawdowns through volatility-based position sizing
- **Early Bitcoin investor since $80 (2013)**

Technical Leadership
- Built and deployed production AI systems for trading intelligence
- Architected distributed ML inference pipelines for real-time predictions
- Developed RAG systems and LLM-powered research platforms
- Led transformation from traditional to AI-augmented trading

RESEARCH & SELECTED PROJECTS

LLM-Augmented High-Frequency Trading System `MSC RESEARCH`
Novel architecture combining LLMs with real-time HFT. Custom transformer with attention mechanisms. **65% Sharpe ratio improvement**. Python, PyTorch, CCXT, Docker, TimescaleDB, Ray.

Ethereum Price Prediction `AI/ML`
LSTM/GRU/XGBoost ensemble, 78% accuracy.

Crypto Sentiment Alert `NLP`
Real-time NLP across Twitter/Reddit/News.

Backtesting Framework `PRIVATE`
Multi-asset, 5+ years tick data, walk-forward.

Risk Analytics Dashboard `PRIVATE`
Live monitoring, volatility targeting, P&L.

ML Signal Generator `QUANT`
Distributed inference, <100ms latency.

EDUCATION

MSc Computer Science — AI & Data Science
University of Wolverhampton, UK

2023 – 2025 | Grade: Merit
Dissertation: LLM-Augmented HFT Strategy Development
Coursework: Deep Learning, NLP, ML, Neural Networks, Distributed Systems, MLOps

Bachelor of Business Administration
Hong Kong University of Science & Technology

1995
Marketing with Information Systems minor

CERTIFICATIONS

Gemini Certified Educator
Google | 2025–2028

Securities License (1,7,8,12)
HK SFC | 2021

CS50x Computer Science
Harvard | 2024

MLOps Specialization
Google Cloud | 2024

LANGUAGES

English
Native proficiency

Cantonese
Native proficiency

Mandarin
Professional working proficiency