Ryan(Bohan) Hou

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EDUCATION

Columbia University, Master of Mathematics of Finance GPA[3.8/4.0] New York Expected Dec 2026

University of Waterloo, Bachelor of Mathematical Finance GPA[3.7/4.0] Toronto Sep. 2018 - Jun. 2022

PROFESSIONAL EXPERIENCE

Guotai Junan Securities Co.,Ltd. Shanghai China (June 2022 – Jan 2023)

Quantitative Research Analyst Intern,

• Reproduced and standardized equity factor library from academic and proprietary sources; promoted validated signals for portfolio use.

• Ran cross-sectional tests with industry/size neutralization, IC/ICIR and half-life diagnostics, and PCA-based redundancy reduction under walk-forward validation.

• Developed volume-spike intraday strategies (15–45 min horizon) with realistic cost modeling and OOS IR ≈ 0.45.

MUFG Investor Services, Toronto, Canada (April 2023-August 2025)

Banking Risk Associate,

• Built Python-based VaR/ES and stress-testing engines using EWMA/GARCH volatility and scenario models; validated via Kupiec/Christoffersen tests and adopted for IR & FX market-risk monitoring.

• Designed credit- and counterparty-risk frameworks (FX exposure, overdraft, SA-CCR-lite/PFE) with automated exposure-vs-limit heatmaps and daily alerts.

• Engineered SQL/AWS ETL and KRI automation pipelines with full reproducibility and audit trails, integrated into the 2025 ICAAP submission under Basel standards.

PERSONAL EXPERIENCE

Quant Strategy Research Framework — systematic alpha generation & diagnostics platform

• Developed and maintained a research framework for cross-sectional and intraday signals with cost-adjusted back testing.

• Automated IC/ICIR and decay diagnostics with turnover and capacity monitoring; optimized portfolio under β/TE constraints.

• Conduct weekly strategy updates and live shadow-book tracking through reproducible reports and dashboards.

Treasury Curve Butterfly Carry & Roll-Down Strategy

• Constructed DV01-neutral Treasury curve butterfly strategies to isolate carry-and-roll-down effects while hedging level risk.

• Showed that butterfly carry returns are highly regime-dependent and break down during volatility-driven curve reshaping rather than gradual roll-down

SEC Filings NLP Alpha Engine

- Engineered a production-grade alt-data pipeline ingesting and parsing SEC 10-Q/10-K filings with dynamic universe control, rate-limit compliance, and fault-tolerant retries.
- Applied financial-domain NLP (FinBERT, keyword-based filters) to extract and normalize Item 1A and Item 7 sections, enabling sentiment, topic, and semantic factor construction.

Market Maker Simulation Engine

- Implemented a deterministic limit-order-book and matching simulator in Python (NumPy/Numba + asyncio) to test inventory-aware quoting, queue-position dynamics, and execution cost/impact.

SKILLS&KNOWLEDGE

- Programming: Proficient in Python and SQL
- Knowledge: measure theory and probability; stochastic process(Itô SDEs),Derivative Pricing, Fix income; convex/QP optimization; numerical methods; hedge fund strategy ,econometrics & time series, , Microstructure & market making
- ML, Backtesting & Production: supervised ML for signals (regularized linear models, tree ensembles); time-series CV & walk-forward; transaction-cost/slippage/impact modeling; IC/Rank-IC & Sharpe/IR;
- FRM(Financial Risk Manager) Certification Holder (May, 2024)，World Quant daily Alpha gold medal
- Hobbies: Basketball, reading, and active trading (swing(most) and algorithm) based by personal market research