

Hongyang Li

(+86)136-3436-6081 | zjulihongyang@gmail.com | github.com/EricLiZJU

Education

Zhejiang University *Ph.D. in Management, Computational Social Science* Expected Jun. 2028

- Research interests: **financial time-series modeling, deep learning forecasting, multi-agent quantitative trading systems, and interpretable financial AI.**

Harbin Institute of Technology *B.Eng. in Automation, Control Science and Engineering* Jun. 2023

- National Second Prize, China Undergraduate Mathematical Contest in Modeling; Honors Bachelor Degree, HIT Elite College; First-Class Scholarship.

Publication

Exchange Rate Forecasting with Multi-scale Residual LSTM and Dual-task Learning 2026.03

Expert Systems with Applications First Author, SCI Q1 Journal, 2026

- Proposed a **multi-scale residual LSTM with dual-task learning** framework, integrating macroeconomic variables and SHAP explanations for exchange-rate forecasting and extreme-movement detection.
- Evaluated the model on CNY, JPY, KRW, EUR, and GBP; achieved strong performance on volatile currencies, including **RMSE=1.7985**, **MAPE=0.0108** for JPY and **RMSE=8.5148**, **MAPE=0.0050** for KRW.
- Achieved **ROC-AUC=0.8516–0.9221** for extreme-movement classification on CNY/JPY/KRW, with robustness validated by multi-seed experiments, rolling-window evaluation, and high-volatility stress tests.

Skills

- **Quantitative Research:** CTA strategies, futures backtesting, financial time-series forecasting, factor modeling, grid trading, portfolio risk control, slippage and transaction-cost modeling.
- **Programming & Engineering:** Python, PyTorch, NumPy, pandas, scikit-learn, SQL, C/C++, Shell, Git, Linux, LaTeX.
- **AI & Agents:** LSTM, TCN, Transformer, multi-task learning, reinforcement learning, multi-agent systems, LLM agents, Agent Runtime, SHAP explainability.

Professional Experience

Hangzhou Nizhiyou Information Technology Co., Ltd. *Quantitative Strategy Research & System Development* Dec. 2025 – May 2026

- Developed a deep-learning-based research framework for **CTA and futures strategies**, covering market data processing, feature engineering, model training, signal generation, and backtesting evaluation.
- Built an **automated grid-trading system** with configurable strategy parameters, market data ingestion, automatic order execution, position management, take-profit/stop-loss logic, and risk controls.
- Incorporated futures-specific constraints into backtesting, including margin requirements, commissions, slippage, contract multipliers, and minimum tick sizes, improving consistency between research backtests and live-trading assumptions.

Shibe Investment Co., Ltd. *Quantitative Strategy Research Intern, Deep Learning* Sep. 2024 – Dec. 2024

- Conducted research on equity return prediction and quantitative factor modeling, experimenting with multi-factor inputs, deep learning architectures, and training schemes.
- Built a factor feature-engineering and model-evaluation pipeline to compare the impact of different factor combinations and learning algorithms on return prediction, risk exposure, and portfolio performance.

Selected Projects

Multi-Agent Quantitative Trading Model System Research Group Project

Lead Developer

- Designed a **multi-agent trading system** that decomposes the trading workflow into market perception, strategy routing, strategy execution, risk approval, simulated execution, and feedback learning agents.
- Built a lightweight **Agent Runtime** supporting agent registration, topic-based scheduling, unified message structures, execution logs, and trace replay.
- Encapsulated trading strategies as Capsule Agents and used a Strategy Routing Agent to dynamically select strategies based on market states, strategy scores, and exploration weights.

Multi-Agent Arbitrage Model for Polymarket Prediction Markets Research Group Project

Lead Developer

- Designed a multi-agent arbitrage framework for Polymarket prediction markets, covering event discovery, CLOB order-book perception, probability estimation, strategy routing, risk approval, and paper execution.
- Constructed a Probability State representation including market-implied probability, internal fair probability, edge, confidence, and time-to-resolution to identify mispricing opportunities.
- Designed strategy capsules such as Binary Parity, Multi-outcome Consistency, and Probability Value, with liquidity, rule-uncertainty, and event-correlation risk controls.