Yuheng(Paul) Yan

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EDUCATION EXPERIENCE

Johns Hopkins University — Baltimore, MD
MSE, Financial Mathematics(GPA:3.8/4) — Sept 2024-May 2026

Core Courses: Stochastic Process; Machine Leaning; Investment Science; Advanced Statistical Theory; Advanced Equity Derivatives; Time Series Analysis; Interest rate and Credit Derivatives; Commodity Markets; Mathematical Game Theory; Introduction to Data Science; Machine Learning in Finance

Teaching Assistant- Empirical Finance — Mar 2025-July 2025

- Guided students in building machine-learning pipelines for high-frequency trading using live tick data.
- Introduced NLP-based sentiment models (FinBERT/Vader) for portfolio optimization tasks.

Teaching Assistant- Crypto and Blockchains — Jan 2026-Mar 2026

- Supported crypto trading labs—on-chain flow auditing, stat-arb, RL trading, and AMM microstructure/slippage—helping students translate market microstructure + blockchain data into executable strategies.

China University of Mining and Technology — Xuzhou, China
BS, Applied Mathematics (Ranking:3/37) — Sept 2020-June 2024

WORK EXPERIENCE

SNTIMNT.AI — Lake Mary, FL
Quantitative Research Intern → Tech lead(CTO-level ownership) — July 2025-Present

- Managed a 5-person quant team; owning an **end-to-end trading system** and **reporting directly to CEO**.
- **Built the research→execution pipeline (data → signal → risk → backtest → paper/live) with robust monitoring under real-world constraints.**
- Developed **RL-based crypto strategies** achieving **Sharpe 1.95** and **+85.3%** out-of-sample return; improved generalization via reward/risk shaping and training stability.
- Directed NLP-driven sentiment analysis on crypto news and social media from different data sources, integrating signals to strengthen alpha generation.
- Designed investor-facing performance dashboard (PnL, exposure, drawdown, turnover) and collaborated with marketing to refine website messaging and product Q&A.
- Supported CEO in fundraising workflows by translating strategy/system capabilities into clear narratives, metrics, and diligence-ready materials.
- Validated internally developed strategies with personal capital, achieving a 100% return (2k → 4k) over two months.

Hangzhou Heixi Asset Management — Hangzhou, China
Quantitative Researcher Intern — June 2023-Dec 2023

- Engineered high-frequency features from Level II order book data—including order flow imbalance and volume clustering to uncover microstructure-driven alpha signals.
- Applied LSTM model to high-frequency order book data, enhancing signal extraction and predictability precision.

RESEARCH EXPERIENCE

Co-First Author : Identifying and Quantifying Financial Bubbles with the Hyped Log-Periodic Power Law Model
Supervisor: Prof. Helyette Geman | Preprint: https://arxiv.org/abs/2510.10878 | ***Presented at The 21st Quantitative Finance Conference 2025, Italy; Upcoming Presentation at QuantMinds International 2025, London.***

- Co-developed a unified bubble detection framework integrating LPPL residual dynamics with NLP-based Hype Index and sentiment scores, leveraging behavioral finance to quantify overbought and oversold phenomena.
- Designed a dual-stream Transformer to jointly process stock-level and market-level signals, achieving **MSE = 0.087 and Pearson correlation 0.625** in Bubble Index prediction.
- Implemented systematic trading strategies; delivered **34.1% average annualized return and Sharpe 1.13**, with best cases exceeding 100% annualized return (Sharpe >3) in backtests for US market.

Research Assistant - Systematic Arbitrage & Factor Structure Analysis
Carey Business School, Johns Hopkins University — Jan 2025-July 2025

- Replicated and extended a PPCA-based equity arbitrage framework from academic literature, constructing long–short portfolios; improved benchmark results by raising Sharpe from 0.7 to 1.6, annualized return from 18% to 23% and reducing max drawdown from 23% to 14%.
- Applied LASSO regression to high-frequency market microstructure features, isolating predictive signals while reducing dimensionality under real-time constraints.
- Benchmarked machine learning forecasts of quarterly P/E ratios; achieved MSE = 0.084

SKILLS

Python(pytorch, tensorflow, sk-learn); Machine Learning (Deep Learning, Reinforcement Learning, NLP);Microsoft(VBS) SQL; MATLAB; R; C++; Linux; DerivaGem; LSEG Workplace; Bloomberg Terminal; AWS Cloud;