ZHIJUN CAO

434.422.0739 | www.linkedin.com/in/zhijun-cao | zhijunca@andrew.cmu.edu

EDUCATION

CARNEGIE MELLON UNIVERSITY, TEPPER SCHOOL OF BUSINESS — New York, NY
Master of Science in Computational Finance – MSCF — ***GRE Quant: 170/170*** — 12/24
- Algorithmic Trading, Advanced Derivative Model, Financial Optimization, Machine Learning, Stochastic Calculus

UNIVERSITY OF VIRGINIA — Charlottesville, VA
Bachelor of Arts in Mathematics and in Computer Science, minor in Economics — ***GPA: 3.9/4.0*** — 05/23
- Relevant Coursework: Algorithmic Game Theory, Algorithms, Advanced Linear Algebra, Econometrics, Cryptocurrency
- Leadership: Sailing Club Competition Director, Co-founder of UVA Chinese Tennis Union
- Programming skills: Python, C++, Java, SQL

COMPETITIONS

1st PLACE IN QUANTBOT CMU DATATHON COMPETITION — *04/24*
- Feature engineered 700+ parameter to generate alpha signals and leveraged LightGBM model to predict future trend on real stocks data; achieved best ranking based on metrics of Sharpe Ratio, Max Drawdown, and Turnover Ratios.

3rd PLACE IN AI POKER COMPETITION AT CMU DATA SCIENCE CLUB — *03/24*
- Implemented Counterfactual Regret Minimization Algorithm for poker bots and utilized Monte Carlo Simulation to calculate win rate for each deck card composition; simulated Nash Equilibrium strategies based on win rate and adjusted playing styles according to opponents' behavior.

EXPERIENCE

FIDELITY INVESTMENT — Boston, MA
Systematic Portfolio Engineer Intern, Strategic Advisor Investment Team — *06/24 - 08/24*
- **Momentum Factor Analysis:** Visualized momentum bias on TE (tracking error) estimation used in tax loss harvesting and rebalancing for 3K+ active portfolios; modeled active return time series using ARMA to reduce TE estimation bias by 23%.
- **Portfolio Optimization:** Integrated the TE estimations with PRT (Portfolio Risk Tradeoff) on Axioma optimizer to improve asset allocations for clients, increased tax alpha systematically on $200+ billion composite SMA portfolios by 37bps.
- **Linear Regression:** Applied linear regressions on 30+ feature engineered financial instrument predictors with composite active return time series to identify momentum factor attributions, achieving an adjusted R square up to 0.83.

SHENZHEN ANGEL FUND OF FUNDS (Largest FoF in China with $2 billion AUM) — Shenzhen, China
Venture Capital Analyst Intern, Angel Investment Team — *06/23 - 08/23*
- **Portfolio Management:** Conducted market analyses of early-stage technology startups, leading to investments totaling $6 million across three portfolio companies; achieved 18% increase in revenue returns and over 70% annual IRR.
- **Model Development:** Devised start-up valuation model integrating financial analysis, market positioning, growth potentials and estimated P/E ratios; developed pitch decks for portfolio companies presented to board committees.

AUDIBLE, INC (Amazon Affiliated Company) — Cambridge, MA
Software Development Engineer Intern, Andromeda Team — *05/22 - 08/22*
- **Data Interface:** Engineered full-stack Audible internal platform using Chaperone framework, empowering PM and QA teams to independently monitor data; elevated overall team productivity by 28% by reducing data access latency.
- **Database Deployment:** Extracted 370+ GB of real-time data from AWS DynamoDB database, employing GraphQL schema for data typing and utilizing Apollo Server for frontend UI token-based queries.

HIKERWAY — Beijing, China
Quantitative Research Intern, Algorithmic Trading Strategy Team — *05/21 - 08/21*
- **Algorithm Construction:** Devised anti-logarithm algorithms leveraging Bollinger Band and Exponential Moving Average (EMA) to accurately label stock price trend tops/bottoms, achieving overall F1-score of 94%.
- **Quantitative Modeling:** Implemented AI-based quantitative model to predict future stock index tops/bottoms using Random Forest and XGBoost Models with daily price-based and volume-based factors, yielding prediction accuracy of 73%.
- **Trading Strategies:** Integrated fine-tuned quantitative model with event-driven factors and sentiment analysis; backtested on historical data of ETFs, generated annualized sharpe ratio of 2.43 with transaction costs and max drawdown of 14.31%.

ADDITIONAL INFORMATION

- Honors: Gold level WorldQuant Challenge, CMU $15,000 Merit Scholarship, Phi Beta Kappa, 1st in Jefferson Cup Regatta
- Interests: Sailing, Tennis, Ping-pong, Ultimate Frisbee
- U.S. Permanent Resident (not require sponsorship)