YUNXIANG (LARRY) DAI

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PROFESSIONAL EXPERIENCE

Forest Creek Capital LLC — Dallas-Fort Worth, TX
*Quantitative Research Analyst (**Market Manager**)* — Feb 2023 - Present

- **Entrepreneurship**: Lead company's extension to a new energy commodity market, own its daily operations and P&L
- **Automated Strategy**: Have the first formal strategy running in market. Built Gradient Boosting models to predict price and return; moved 90% of the system to Google Big Query, improved computation speed by 300+ times; speed up local code by multiprocessing. Coded to calculate 50+ new features from database. Designed Python libraries that output an interactive strategy backtest frontend, where inspection and optimization is intuitive
- **Statistical Modeling**: Innovated in simulation models by incorporate residuals learning, corrected the instance distribution, resulting in 20% reduction of RMSE error on one of the core valuation models used in the company
- **Trading**: brainstormed and experimented 4-5 new trading ideas, brought in profits and planed in rigorous strategy backtest
- **Cloud Computing and Big Data**: Achieved simultaneous ML model training and feature collection fully based on GCP and a record system, leveraging Kubernetes Clusters, Containers Registry, Google buckets, Could SQL and Big Query
- **Development**: Full stack developed market trading platform, which serves bids submission, risk monitoring and manual trading; built bids management flow from internal database to market API; optimized massive risk metrics calculation with caching; highlight risky bids in real-time; company risk policies inspection and automatic risk cut; resource management to make it safe for simultaneous usage by multi-user
- **Infrastructure**: Designed and built 40 market fundamental database in Big Query and MySQL; built automated and self-healing data pipelines that is idempotent and make proper log and noise in anomalies; researched market collateral and funding rules, finally internal market financials data matched with invoices and website postings

Huatai Securities — Shanghai, CN
Quantitative Research Intern — Apr 2020 - Jul 2020

- Implemented quantitative asset allocation strategy including CPPI, Risk Parity, Smart Beta, Fama French 3 with Wind data APIs; improved a new bulk asset allocation idea with Python and JoinQuant platform, increased cagr by 2%
- Tested a macroeconomic framework of 47 time series with Granger causality test; visualized with detailed reports

EDUCATION

Georgia Institute of Technology — Online
M.Sc. in **Computer Science** — Sep 2024 - May 2027

- Courses: Advanced Operating System, Software Architecture and Design, Distributed Computing

Columbia University (GPA: **4.0/4.0**) — New York, NY
M.Sc. in Financial Engineering — Sep 2021 - Feb 2023

- Courses: Implied Volatility Smile, Continuous Time Models, Deep Learning, Optimization Models, Natural Language Processing, Stochastic Models, Monte Carlo Simulation, Algorithm Trading

Zhejiang University (GPA: **3.92/4.0**) (Top 3%) — Hangzhou, CN
B.Sc. in Finance (Graduate with 1st class Honor) — Sep 2017 - Jul 2021

- Courses: Complex Analysis, Partial Differential Equations, Object Oriented Programming, Computational Methods, Mathematical Modeling, Linear Algebra, Probability Theory and Mathematical Statistics, Multivariable Calculus

RESEARCH AND PROJECTS

Ask2.AI — New York City, NY
ML Research Intern — Sep 2021 - Jan 2022

- Achieved time series modeling and synthetic time series generation by researching on various GANs
- Built Python code for a GAN compounded with autoencoders, supervisor, moment regulator, with building blocks including MLP, TCN, GRU, (Bi) LSTM, CNN and loss functions Wasserstain-1, MSE and binary cross-entropy
- Beat vanilla GAN in PCA diversity, fidelity, predictive usefulness, single density function distance, 3rd and 4th moments

SKILLS AND INTERESTS

Language: English (Fluent), Chinese (Fluent)

Technical: Python, C++, Java, PHP, SQL, Big Query, SAS, MATLAB, R, EViews, GCP, Linux, HTML, Machine Learning (PCA, Kmeans, Random Forest, Kernel Density Estimation), Deep Learning, Time Series Modeling, Linear Optimization

Interests: Badminton, Traveling, Photography, Hiking, Cooking