Jeffrey Chen

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SKILLS

Programming	Python (numpy, pandas, dask, skleaern, cvxpy, tensor, pytorch), C++ (UIUC-Certificate), R, JavaScript
Toolkits	Git, AWS, Azure, ,SQL, OS/Linux, Tableau, Snowflake, Docker, DevOps/Pipeline, React, HTML, CSS
Others	Data-driven, Innovative Approach, Verbal & Written Communication, Humor, Sports-Betting, Crypto(still)

EDUCATION

Cornell University — New York
Graduate Certificate for Machine Learning — Present
- Coursework: Machine Learning, Estimating Probability Distributions, Linear Classifiers

University of California, Los Angeles — Los Angeles, CA
Master of Financial Engineering — Dec 2021
- Coursework (GPA: 3.6/4.0): Statistical Arbitrage, Machine Learning, Quantitative Asset Management, Computational Finance, Stochastic Calculus, Fixed Income, Derivatives Markets, Empirical Methods in Finance, Econometrics
- Rotman International Trading Competition UCLA Team Representative

National Taiwan University (NTU) — Taipei, Taiwan
Bachelor of Science in Chemistry — Jun 2020
- Relative Coursework (GPA: 3.5/4.3): Advanced Statistics, Advanced Analytical Chemistry, Data mining, Python Programming, Using R for Data Analysis, Research Training for Junior, Calculus, Engineering Mathematics

WORK & RESEARCH EXPERIENCE

BlackRock — New York, NY
Index Equity Financial Engineer — Feb 2022 - Present
- Architected meta-algo to build next-generation automated trading engine for ETF and Index portfolios and troubleshoot production issue along the CI/CD pipeline
- Built order management system for order posting to handle portfolio validations, constraints and replication process
- Constructed ETF order authorization algo for ETF creation/redemption process
- Integrated index projections and created turnover calculation for quarterly index rebalancing
- Consolidated billions time-series portfolio order data into back-testing system for play-back in C++
- Designed concurrent ETL pipeline between storage and Tableau interface and improved runtime 30x faster

Western Asset Management — Los Angeles, CA
Quant Research Intern — Apr 2021 - Dec 2021
- Portfolio construction on fixed income index using stratified sampling with 3-dimensional strata
- Built convex optimizer (mixed-integer) to create two-layer portfolio optimized weights that match the duration, convexity, and DTS of the benchmark
- Created asset sector allocation model from optimized portfolio to maximize the yield with constraint tracking errors

Cboe Global Markets — Chicago, IL
Derivative Strategy Intern — Jun 2021 - Aug 2021
- Built time-series classification model (Kmeans and DTW) to identify trading strategies associated with VIX future
- Developed Elastic Net model to perform 5-fold cross validation on VIX future tick data to find the optimal amount of regularization for 10 seconds mid-price predictions
- Implement new tailed indices to production line, a robust measure for volatility jump risk
- Developed in-house option pricing library, monitoring tools and automated log reports for index calculations

RESEARCH PROJECTS & ACHIEVEMENTS

Citadel DataOpen Championship 2021, Finalist
- Selected to compete the Citadel Data Championship for grand prize $100k. Performed empirical research to analyze the inefficiency of plastic pollution from international trade metrics and deployed GNN model for trade flow prediction.

Citadel Summer DataOpen 2021, 3rd place
- Created an improved review rating system for Airbnb using unstructured dataset. Responsible for designing sentiment index using NLP techniques and LDA model. Performed RandomForest, XGBoost, and SVM models for robustness validation. Won $2500 cash price

Citadel Terminal Live WestCoast 2021 (Algo Competition), 10th place
- Designed dynamic algorithms in python for a tower defense-style game, focusing on corner attack strategies. Contended in regional tournament and won $2000 cash price

WorldQuant International Quant Championship 2019, Regional 5th place
- Led a team to compete and design trading strategies (momentum&reversion) for alpha generation, finishing top 5 in Taiwan. Offered research consultant

7th World Chinese Mass Spectrometry Conference Poster 2018; Dr. Cheng-Chih Hsu Lab Group (NTU)
- Rapid Identification of Bacteria Species - Investigating new methodology for rapid identification of bacterial pathogens using mass spectrometry and unsupervised learning (PCA & Cosine Similarity) to build a prediction model