Benjamin Nguyen

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EDUCATION

University of Illinois Urbana-Champaign — Champaign, IL
Masters in Computer Science — Aug 2023 − Dec 2024 (Expected)
B.S. in Computer Science, Magna Cum Laude (3.92/4 GPA) — Aug 2020 − Dec 2022

EXPERIENCE

Software Engineering Intern — May 2024 − Present
CME Group — *Chicago, IL*
- Developed a full-stack web dashboard service using Dash in Python to visualize performance indicators (latency, message loss, etc), display results of extract injection from FIXP messages, and assess the latency profile of internal critical trading applications.
- Integrated multiple internal applications (HRI, IMDB, and Corvil) to ensure Prod performance runs align with the QAH environment and incorporate median outlier detection to ensure credibility of performance runs.
- Automate data pipelining to streamline the entire process from SFTP log retrieval, to data extraction using Regex, to storing Python objects in SQLite3 Database, to querying REST API's to display key performance metrics.

Partner, Ex-CEO, Ex-CTO — Sep 2021 − July 2024
Quant Illinois, NFP. — *Champaign, IL*
- Educated members on high-frequency trading (HFT) practices, covering topics such as C++, order book updates, hardware, and niche trading topics (microwave transmission, market microstructure, A/B feed arbitrage, canaries, spoofing, etc.).
- Collaborated with Operations and Software team on projects including Sushi Go Trading Game and Python Futures Exchange.

Software Engineering Contractor — Aug 2023 − Feb 2024
RCM-X Technologies — *Chicago, IL*
- Conducted data normalization, data validation, and time-series analysis (cross correlation, ad-fuller) on diverse datasets to extract key indicators for trading strategies.
- Developed a backtester in Python to evaluate trading strategies using our own normalized datasets.
- Utilized existing public data to estimate prices of sparse data asset class by leveraging underlying market models through regression and identifying high correlations between similar assets.

PROJECTS

Python Futures Exchange [*GitHub*] — Multiprocessing, Exchange Infrastructure
- Developed a fixed-length binary protocol for order entry and market data feeds (Top of Book, 5 levels deep).
- Designed a multiprocessed gateway to the central limit order book for concurrent order entry.
- Enhanced clearinghouse functionality to update margin calculations, settle contracts, and accurately calculate PnL based on real-time market data feeds.

Order Matching Engine [*GitLab*] — C++11, Vagrant, Multithreading
- Parallelize tasks using control flow to organize Ser/Des NASDAQ message types and order matching.
- Use Vagrant to simulate heterogeneous hardware and allow machine agnostic setup and testing.

Sushi Go Trading Game [*Slides*] — Trading Competition, Game Design
- Developed a new trading game with a Vickrey Auction and optimized point system through extensive play-testing
- Co-hosted the event with IMC Trading

Akuna Trading Competition 2024
- Created market maker bot to trade futures on a stochastic game using Stoikov model and Kelly criterion.

SKILLS

Languages: Python, C++, C, Java, SQL
Technologies: Git, Vagrant, Docker, Bash, Sqlite3, PyTorch, Dash/Plotly, Pandas, SKLearn, Statsmodels, Catch-2, CMake, Doxygen, Linux, SQLite, Vim
Competitions: Jane Street SF Puzzle City 2023 (Won), IMC Prosperity 2024 (388th/3215), Bridgewater x Metaculus Forecasting Competition 2024 (68th/868), CME Intern Trading Competition 2024 (3rd/76), Old Mission Capital Poker Tournament 2024 (4th/10 tables), Akuna Trading Competition 2024
Hobbies: Poker, Piano, Swimming, Food