Aditya Diwakar

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Education

Georgia Institute of Technology — Atlanta, GA

Bachelor of Science, Double Major in Mathematics and Computer Science — *Aug. 2019 – Dec. 2023*

Coursework: *Stochastic Processes, Partial Differential Equations*, Numerical Analysis, Probability & Statistics, Applied Combinatorics, Abstract Algebra, Data Structures & Algorithms

South Forsyth High School — Cumming, GA

High School Diploma

- Graduated with 4.66/4.0 GPA winning 32 Regional and 2 National Awards for AI Usage in VEX Robotics
- Won 2 Worlds Titles and 7 1st Place Awards for Events in TSA including "Systems Design" & "Software Design"

Experience

Founder, Head of Operations — Jun. 2020 – Jul. 2021

Loganov Data — *Atlanta, GA*

- Developed rigorous mathematical models to analyze weather data to accurately determine supply/demand volatility for Natural Gas on the New York Mercantile Exchange (obtained 92% accuracy)
- Communicated with vendors such as the National Weather Service and European Centre for Medium-Range Weather Forecasts to develop data ingestion pipelines to reduce latency from 20 to 3 minutes for twice daily satellite reports
- Interpolated anomalized trends for Natural Gas using cyclical mathematical processes
- Provided reliable data with low-latency to hundreds of end-users utilizing websocket and RESTful/GraphQL APIs

President — Apr. 2020 – July 2020

Code the Universe — *Kansas City, KS*

- Managed a non-profit organization, with 30 direct reports, to provide learning resources to nearly 2,500 students
- Developed course registrars (using match-making algorithms) to allow for class registration on a flexible basis
- Streamlined existing infrastructure to simplify required oversight by management team

VP of Technical Operations — Oct. 2018 – July 2019

NetVPX Hosting LLC — *Boston, MA*

- Managed client onboarding and technical support operations to ensure sub-hour ticket response times
- Offered and handled SLA negotiations to provide reliable systems with 99.97% uptime
- In charge of proof-of-concepts for developing custom hosting provisioning software and additional product SKUs
- Streamlined protocols to mitigate downtime, yielded consistent resolution of outages within 10 minutes

Projects

Open Exchange | *OCaml, TCP/IP, NYSE FIX, Switching, Profiling, Financial Engineering* — Dec. 2020

- Developed a fully-fledged exchange/auction system using a classic book approach accessible over TCP sockets capable of handling market orders, bids, asks, and cancels using a parallel exchange fairy system
- Implemented, optimized, and rigorously tested efficient data structures to reduce order matching/execution times to faster than the industry gold standard; documented process using benchmarking and a spreadsheet
- Practiced Jane Street best practices of developing low latency OCaml code, optimized/profiled with `ocamlprof`

Blueberry | *Go, PostgreSQL, Redis, Docker, Websockets, REST API* — Sep. 2019

- Created a market data provisioner that streamed data from the CQG Futures ticker-tape to provide top-level quote data with sub-millisecond latency
- Logged and automatically analyzed quote and order book data to determine price level supply/demand hotspots
- Consistently received over one million data requests on a daily basis

Flux | *Go, Websockets, TravisCI, Git, TCP/IP, OAuth2* — Jan. 2020

- Provided a Golang Library for the TDAmeritrade Data Socket to expose endpoints for developers to retrieve quote, chart and option series data on an ad-hoc basis
- Distributed library binaries with insurance for reliability by integrating fail-safe protocols for client disconnects
- Used extensively in multiple projects from other developers as a reliable way to get data from financial markets

Skills

Languages: OCaml, Go, Python, C/C++, SQL, Rust, Java
Developer Tools: AWS, Git, Docker, TravisCI, CI/CD, Kubernetes, GCP, Vim, Sentry, Nginx, Caddy
Infrastructure: Routing/Switching, Load Balancing, Proxying, Delivery Networks, Matching Engines
Mathematics: Stochastic Modeling, Hypothesis Testing, Numerical Analysis, Brownian Motion, Differential Equations
Finance: Volatility, Options, Futures, Arbitrage, Slippage Backtesting, Binomial Pricing, Commodity Markets