Ashika Verma

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(979) 492-9820

Experience

- **Citadel Securities** — New York, NY
  Software Engineer — *Sep. 2022 - Present*
  - Spearheaded the migration of the NYSE Equities market data adapter, handling critical real-time data for one of the world's largest exchanges. Transformed raw market data feeds (TCP bootstrapping and multicast) into structured callbacks for Quantitative Researchers, leveraging advanced C++ templating/metaprogramming to enhance trading strategy development.
  - Led the development of the UI for a pivotal PNL Aggregation / Fusing Platform using React, Typescript, and q/kdb, collaborating closely with backend engineers and traders to ensure seamless functionality. This pivotal component played a crucial role in the company's strategic initiative to centralize trading functions, effectively controlling fusing at the company.
  - Orchestrated a comprehensive overhaul of the Capital Monitoring Tool, replacing a Node.js backend with an in-house kdb database streaming solution, significantly boosting performance and reducing deployment time. Streamlined workflows by implementing Python endpoints for risk calculation and scenario analysis. Completely transformed the user experience by modularizing the UI and implementing a dynamic React-based panel system.
  - Managed the backend of the company's developer-focused Gen AI tool, utilizing Python and Tornado. Facilitated the onboarding of 400 developers who utilize the tool for inquiries, showcasing its value in streamlining developer workflows.
- **MIT Quest for Intelligence** — Cambridge, MA
  Student Researcher — *Jun. 2021 - Sep. 2022*
  - Conducted a project to assess the robustness of image face recognition neural networks compared to human performance. Developed a clustering algorithm that utilized the feature vectors generated by the networks to determine face recognition accuracy.
  - Designed and implemented experiments involving hue shifts and varying levels of blur as degradation techniques to evaluate the performance of the neural networks. Expanded knowledge of deep learning models, particularly ResNet, through practical application and experimentation during the project.
- **Kensho** — Cambridge, MA
  Software Engineering Intern — *Jun. 2021 - Aug. 2021*
  - Led the implementation and design of new features on multiple public-facing websites, employing Node.js, Gatsby, React, TypeScript, and Emotion.
  - Collaborated closely with a data science team to design a custom finance NLP model application using Figma. Translated the design into a seamless and intuitive user interface leveraging the React framework.
- **WP Engine** — Austin, TX
  Software Engineering Intern — *Jun. 2020 - Aug. 2020*
  - Made significant contributions to the development and implementation of a suite of tools using Go, Docker, Kubernetes, GCP, Terraform, and Jenkins. Collaborated with the team to build and refine a Node application builder, API server, and CLI tool.

Projects

- **Security of CAT-SOOP**: Conducted a comprehensive security analysis of CAT-SOOP, the grading website for one of MIT's largest classes. Leveraged Python and BurpSuite to identify and exploit security vulnerabilities, resulting in the discovery of sensitive student data, gaining instructor permissions, and uncovering methods to effectively shut down the website server.

Education

- **Massachusetts Institute of Technology** — Cambridge, MA
  M.Eng. in Computer Science; GPA: 5.0; B.S. in Computer Science; GPA: 4.9 — *Aug. 2018 – Sep. 2022*

Programming Skills

- **Languages**: C++, TypeScript, Python, Go, q