

Syed Hannan Shah

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[Github](#) | [LinkedIn](#)

EDUCATION

Bachelor of Engineering - Computer Engineering

Sep 2022 - May 2026

Rutgers University School of Engineering - Honors College

CS GPA : 3.75

Related Coursework: Data Structures And Algorithms, Software Engineering, Internet Technology, Discrete Structures, Probability and Random Processes, Calculus I-IV, Linear Systems and Signals

EXPERIENCE

Blockhouse

November 2024 - Present

Software Engineer Intern

New York City, NY

- Engineered ultra-low-latency backend microservices using Django, Golang, and Rust, **processing petabytes of high-frequency trading data at nanosecond latencies**, enhancing trade execution speed and scalability.
- Optimized data pipelines and storage with Redpanda (Kafka), ClickHouse, KDB+, and MongoDB, enabling advanced analytics and machine learning via AWS SageMaker, **improving predictive trading accuracy**.
- Developed high-performance frontend applications with Next.js and TradingView, delivering real-time dashboards that **accelerated trading decisions** through AWS integration and monitoring tools.

Florida International University

May 2024 - Present

Machine Learning Research Intern

Miami, FL

- Enhanced the security of Federated Learning techniques for resource-constrained edge devices by simulating attack and aggregation algorithms and **creating a neural network model from scratch in C++**.
- Conducted extensive validation and testing on simulated IoT devices, **achieving 75% validation accuracy** despite various attacks, confirming the robustness of the implemented aggregation strategies.
- Leveraged state-of-the-art quantization techniques and initiated pruning methodologies to substantially minimize the computational resources required for simulation, **reducing resource consumption**.
- Developed efficient data loading and batch processing mechanisms to handle large-scale simulations, enabling seamless execution across multiple devices and **significantly reducing simulation runtime**.

AHS Insurance Services

August 2023 - May 2024

Software Engineer Intern

Jersey City, NJ

- Developed a responsive insurance broker landing page using React.js and Tailwind CSS, **enhancing client UI/UX**.
- Deployed on Vercel using CI/CD and **ensured code quality** with ESLint, Prettier, Autoprefixer, and PostCSS.
- Optimized development with Vite and **integrated interactive animations to boost user engagement**.
- Collaborated with non-technical business owner to ensure key information was effectively presented.

Rutgers University

May 2023 - August 2023

Bioinformatics Research Intern

Piscataway, NJ

- Developed and implemented **automated data analysis scripts in Python** to process transformation data, improving hypothesis testing and observing GUS staining in calli leaves.
- Utilized SnapGene to program and visualize the binary vector system delivery of T-DNA to plant nuclei via the Type IV secretion system, yielding successful transformation of tobacco leaves with 85% efficiency.
- Studied the functionality of agrobacterium binary vectors containing kanamycin resistance and GUS genes.

NOTABLE PROJECTS

ReferLoop

- Developed full-stack referral platform using React.js and Next.js to **share credit card referral bonuses securely**.
- Implemented a validation system that pulls data from r/churningreferrals to ensure legitimacy of referral links, using URL validation and security checks for **actively preventing website spoofing and fraud**.
- Integrated Docker and CI/CD pipelines, reducing deployment time and ensuring secure operations.

QuantumBull

- Developed a robust Django-based backend system to **fetch and filter daily stock data** from the Alpha Vantage API, optimizing storage by limiting data to the past two years.
- Utilized TensorFlow LSTM model for **stock price predictions**, containerized the application with Docker, and established a CI/CD pipeline using GitHub Actions for automated testing and deployment.
- Implemented a backtesting module to evaluate investment strategies and **generated comprehensive PDF/JSON reports** with Matplotlib and ReportLab visualizations.

SKILLS

Programming Languages	Java Python (Django, Numpy) JavaScript (React.js, Next.js) Flask C (#,++) HTML/CSS
Technologies	Git AWS MongoDB PostgreSQL RESTful APIs GraphQL APIs Mongoose Agile React
Concepts	Full Stack Machine Learning Cloud Computing Distributed Systems