

Sanjit Thangarasu

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EDUCATION

University of Maryland - College Park | B.S. Computer Science Dec. 2024

- Relevant Coursework: Advanced Machine Learning, Artificial Intelligence, Computer Systems (C and Assembly), Linear Algebra, Advanced Algorithms, Computational Finance, Advanced Data Structures, HPC and Parallel Programming

EXPERIENCE

Software Engineer - Department of Homeland Security (USCIS) | Washington, DC Jan. 2024 - Current

- Enhanced and deployed the H1B and I918/I918A forms by introducing the first concurrent filing process, significantly expediting immigration applications for over **500,000** candidates.
- Developed Java-based REST APIs to integrate diverse services and modernize legacy systems.
- Engineered a **microservice** to display analytics on case processing and the overall immigration lifecycle, providing stakeholders with real-time insights and actionable metrics.
- Served as **Release Captain** by overseeing deployments, troubleshooting issues in real time, and coordinating with multiple teams to ensure successful rollouts with minimal downtime.

Software Engineer - REI Systems | Sterling, VA May. 2023 - Jan. 2024

- Developed an internal project viewing tool, which aimed to enhance collaboration between employees in the workplace.
- Integrated modern technologies such as **React, Java, AuroraDB** with **MySQL**, and **ElasticSearch** to develop an interactive user interface, and optimizing user experience with advanced search and filter capabilities.
- Utilized **AWS** services including **VPC, EC2, S3, Lambda**, and **CloudFormation** to build and maintain a highly scalable and secure cloud infrastructure supporting diverse enterprise applications.
- Created a Single Sign-On (SSO) service for the company as a first-time implementation and guided other development teams in adopting this solution using **Microsoft Azure OpenID**.

Senior Quant Analyst - Apex Quant UMD | College Park, MD Jan. 2023 - Dec. 2024

- Designed and implemented a specialized risk management tool using yfinance API, **Python**, and **TensorFlow**.
- Utilized an **LSTM neural network** and various risk metrics to perform granular risk evaluations at both portfolio and individual asset levels, reducing portfolio risk by **60%** and potential loss by **70%**.
- Conducted regular teaching sessions on advanced topics such as machine learning algorithms, financial modeling, and risk assessment techniques.

Software Engineering Intern - Digital Infuzion | Rockville, MD Jun. 2022 - Oct. 2022

- Designed and deployed a **serverless API** to streamline the search and storage of medical journals and publications.
- Maintained full-cycle ownership of the project, led grooming sessions and demos, which enhanced team collaboration.
- Integrated **AWS** services such as **Lambda, CloudFormation, DynamoDB**, and **API Gateway**, creating a scalable API infrastructure now supporting **thousands** of users.

PROJECTS

YCombinator AI Hackathon (Finalist) | [Link](#)

- Developed EasyEval, a more accurate evaluation tool to measure LLM performance, based on a paper by Anthropic.
- Implemented the data integration pipeline as well as model inference and evaluation API using python FlaskAPI.
- Achieved accurate results and was able to evaluate models at more meaningful confidence intervals such as the 95%, and 99%, whereas traditional evaluation frameworks do not have enough precision to evaluate models at that confidence.

High-Frequency Trading Server written in Rust w/ Blockchain Integration | [GitHub 1](#) | [GitHub 2](#)

- Developed a high-frequency trading server utilizing Rust and Solidity, Redis for efficient data storage, and a Web3 interface to facilitate seamless blockchain-based order book interactions, to enhance trading performance and reliability.
- Utilized Actix-web for handling HTTP requests and WebSocket, to ensure low-latency performance.
- Integrated JWT for secure user authentication and authorization, enhancing the platform's security

SKILLS

Languages: Python, JavaScript, TypeScript, Java, Swift, R, C, C++, HTML, MIPS Assembly, OCaml, Rust

Frameworks: Node, React, Nextjs. Express, PostgreSQL, MongoDB, Tensorflow, PyTorch, Jupyter Notebook

Other: SF-85 Security Clearance, Azure, AWS (Lamba, Cloudformation, DynamoDB, API Gateway), Git, CI/CD, Docker