HARSH JAIN

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EDUCATION

Master of Science in Computer Science   Graduating December 2025
University Of Southern California , Los Angeles , California
Coursework: Algorithm Analysis , Web Development , Operating Systems, Databases , Software Engineering

SKILLS

Languages: C , Typescript , Python , Java , Swift
Frameworks: Django Rest Framework , React , Angular , Spring Boot , Node.Js ,Flask , Next.js
Technologies: AWS, GCP , PostgreSQL , MongoDB , Docker , Kubernetes , GraphQL , Redis , Webpack

EXPERIENCE

Sofware Engineer Intern   May 2024 - August 2024
SARA, Los Angeles, California

- Built a service using AWS Lambda, Polly, and S3 to dynamically generate audio instructions for new practice templates, automating the release process and reducing launch times by 50%.
- Developed a phonetic word breakdown service with an IPA-to-orthographic character mapping approach, simplifying visual pronunciation guides for children and boosting audio excercise performance scores by 18%.

Software Engineer Intern   August 2023 - November 2023
Swasthya AI, Pune, India

- Developed a shared Internal Component Library for client-side React applications & migrated front-end developer tooling to Vite, reducing code duplication by 20% & improving initial load performance by 3x for the web application.
- Implemented the CRM analytics dashboard on the MERN Stack to allow for custom task workflow creation and management for hospital staff thereby removing dependency from heterogeneous PM tools.
- Built an EMR application backend for oncologists in major Indian hospitals by leveraging MongoDB's aggregation pipeline, achieving a 30% API performance boost amidst scalability challenges from increasing patient data.

Software Engineer Intern   January 2022 - October 2022
NUDOC Systems, Mumbai, India

- Built a React-based PDF management system to combat sluggish document processing, achieving a 2x reduction in processing time via automated file organization and streamlined flows for repetitive processing tasks.
- Implemented real-time job progress tracking in Django Rest Framework using web sockets and Redis enabling live updates on back-end processing tasks and improving log transmission by 2x over polling.
- Created an optimized PDF archival algorithm, duplicating frequently accessed files to the main server and transferring less frequently used documents to static storage, resulting in a 20% annual reduction in block storage costs.

PROJECTS

Realtime Stock market simulation | bit.ly/Hjstocktrade   January 2024 - July 2024

- Engineered a MEAN stack web app and IOS app to simulate a real time trade platform with trade latency of 100ms.
- Simulated features like real time trading and portfolio management and metric analysis to provide insights on trading patterns and stock trends to allow users to trade with accurate data from the real markets.

Smart Fridge System | bit.ly/SmartFridgeSystem   November 2022- June 2023

- Engineered a Flask service with Docker & a React native application to Monitor Fridge Data, recommend up to 200 recipes based on fridge content and provide nutritional data to speed up food preparation for busy professionals.
- Built a food item data-set with 4000 labelled food items for training the image detection model for freshness classification of common fridge items based on visual decay.

Air France Cargo Challenge (Hackathon) | bit.ly/AFKLMHackathon

- Created an efficient algorithm to place cargo in containers and pallets, to optimize centre of gravity and save fuel by up to 5%, using a combination of a greedy & divide and conquer approach.
- Developed a web application in React and Flask to show the real-time results from the algorithm , compare them with baseline datapoints in the form on graphs and allow a user to download the same.