HARSH JAIN

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EDUCATION

Master of Science in Computer Science Expected Graduation December 2025

University Of Southern California , Los Angeles , California

Coursework: Algorithm Analysis , Operating Systems , Database Systems Design , Web Development

SKILLS

Languages: C , Java , Python , Typescript , Swift

Software & Technologies: AWS , GCP , Linux , Git , Angular , Node.Js, PostgreSQL, MongoDB, Django Rest Framework , React , Next.js , Flask , Docker , Terraform , GraphQL , Redis

EXPERIENCE

Software 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 speech practice templates, automating the release process and reducing launch times by 50%.
- Developed a phonetic word breakdown service to convert IPA-to-orthographic character mappings , simplifying the speech practice flow, eliminating the need to refer pronunciation guides & boosting user engagement by 18%.

Software Engineer Intern August 2023 - November 2023

Swasthya AI, Pune, India

- Built an EMR application backend for oncologists in major Indian hospitals by leveraging MongoDB's aggregation pipeline & GraphQL, achieving a 30% latency boost amidst scalability challenges from increasing patient data.
- Built a Component Library for client-side React applications reducing code duplication by 30% across all applications.
- Revamped front-end developer tooling from webpack to Vite improving initial application render performance by 3x.
- Implemented a CRM dashboard on the MERN Stack to allow for custom task workflow creation and management, improving staff efficiency with automatic task updates, notifications & reducing co-ordination overhead by 30%.

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 live job progress tracking in Django Rest Framework using web sockets and Redis enabling timely updates on back-end processing tasks and improving log transmission by 2x over polling.
- Created an optimized PDF archival workflow, 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 trading & portfolio management system.
- 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 simplify 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.
- Won the best presentation award for 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.