

# HARSH JAIN

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## EDUCATION

### Master of Science in Computer Science

Expected Graduation December 2025

University Of Southern California , Los Angeles , California

3.75 GPA

Coursework: Algorithm Analysis, Web Development, Operating Systems, Advanced Databases, Software Eng

## SKILLS

**Languages:** C , Python , Go , Typescript , Swift

**Software & Technologies:** AWS , GCP , Angular , Node.js, SwiftUI , PostgreSQL, MongoDB, Django Rest Framework ,  
Webpack, Vite, React , Next.js , Firebase , Flask , Docker , Elasticsearch , GraphQL , Redis , Xcode

## EXPERIENCE

### Software Engineer Intern

July 2024 - Present

Southern California Earthquake Center, Los Angeles, California

- Engineered an optimized database schema by revamping indexing strategies and refining table relationships to address legacy performance issues, resulting in a 20% reduction in query latency and improved system responsiveness.
- Managed a 20,000 user emergency drill registration system and migrated it to support a newer backend architecture for better forward compatibility reducing API load times by 30%.

### Software Engineer Intern

May 2024 - August 2024

Speech Articulation and Reinforcement Application, 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 real-time phonetic word breakdown service to convert IPA-to-orthographic character mappings , simplifying visual pronunciation guides for children and boosting audio exercise performance scores 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.
- 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 a CRM analytics dashboard on the MERN Stack to allow for custom task workflow creation and management of hospital staff thereby removing dependency from heterogeneous PM tools.

### 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.
- 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](https://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](https://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](https://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.