Prem Ranjan

Computer Science Engineer

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EXPERIENCE

ICREON COMMUNICATIONS | SDE INTERN
June 2024 – July 2024

- ➔ Engineered a video transcoding pipeline for **Adaptive Bitrate Streaming**. Successfully processed 1,000+ uploaded raw videos by transcoding them into multiple HLS streams (360p, 720p, and 1080p) and enhances user experience by delivering optimal video quality based on individual internet speeds.
- ➔ Implemented a Node.js service that polls an AWS S3 bucket for new video uploads. Detected uploads trigger the sending of messages to an AWS SQS queue.
- ➔ Parsed messages from the queue initiate Docker containers on AWS EC2 instances to transcode videos into multiple HLS streams. Transcoded video segments are re-uploaded to another S3 bucket for streaming.

NIT TRICHY | PROJECT INTERN
June 2023 – July 2023

- ➔ Developed the "Crop Doctor" segment of a React-Native mobile application for diagnosing diseases in paddy crops in collaboration with **CDAC-Hyderabad** and NIT Trichy.
- ➔ The system enables users to input primary and secondary symptoms, select matching images, and receive diagnostic results along with recommended control measures.
- ➔ Utilized a machine learning model trained on paddy-pmvaa/1 through Roboflow 3.0 to enhance disease identification accuracy and improve user experience for effective crop management.

PROJECTS

PDF QUERYING AI SAAS | NEXTJS | Project Demo
April 2024

- ➔ Built and deployed an edge-compatible **AI SaaS** with recurring revenue. Developed a web application that uses AI to analyse and answer queries about uploaded files. Users can interact with an AI assistant to get answers to their questions.
- ➔ Files are split into smaller chunks using LangChain, then converted into vector embeddings to represent their semantic value and generate responses based on the chat context.
- ➔ Utilized NextJS 13.4, AWS S3, OpenAI, DrizzleORM, Stripe, TypeScript, Tailwind CSS, Clerk, and PineconeDB.

PIN-ENABLED FILE-SHARING SYSTEM FOR CLASSROOMS | MERN
Jan 2024

- ➔ Developed **ClassHub Connect** a MERN (MongoDB, Express.js, React, Node.js) stack-based pin-enabled file-sharing system for classrooms.
- ➔ Enabled teachers to add students, share files securely, and facilitate collaborative learning using unique pins. Utilized MySQL ORM for relational data management and MongoDB for file storage.

EDUCATION

NIT TRICHY
B.TECH IN COMPUTER SCIENCE
2021 - 2025 | Trichy, Tamil Nadu
National Institute of Technology
Cum. GPA: 7.90 / 10.0

ST.PAUL'S HIGH SCHOOL
SECONDARY SCHOOL
Vaishali
Cum. GPA: 9.53 / 10.0

SKILLS

PROGRAMMING
Proficient:
C • C++ • JavaScript • SQL • CSS • HTML

Familiar:
Typescript • Python

LIBRARIES/FRAMEWORKS
React • Next.js • Node.js • React-Native

TOOLS/PLATFORMS
Git • Github • Docker • AWS MongoDB • Vercel • OpenAI

ACHIEVEMENTS

- •**All India Rank 82** in JEE MAINS General-EWS category
- • Led the **Finalist** team at the **HACK4GOOD'23** Hackathon by SIST Chennai
- •Developer @**Spider** R&D, Official coding club of NIT Trichy