

HARSH RAJ

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EDUCATION

Netaji Subhas University of Technology (NSUT)

B.Tech in Instrumentation and Control Engineering | CGPA: 7.0

Exp. May 2027

Delhi, India

- **Coursework:** Data Structures & Algorithms, Object-Oriented Programming, Discrete-Time Systems.

Indian Institute of Technology (IIT), Madras

BS in Data Science and Applications

Exp. Dec 2027

- **Coursework:** Statistical Modeling, Database Management, Machine Learning Algorithms.

TECHNICAL SKILLS

Languages: Python, C++, JavaScript/TypeScript, SQL, PHP

Cloud & DevOps: Docker, CI/CD, Google Cloud Platform (GCP), AWS, Linux (Ubuntu), Nginx

Frameworks/Libraries: ReactJS, Node.js, FastAPI, ExpressJS, TensorFlow, MediaPipe

Databases: PostgreSQL, Supabase, MongoDB, SQLite3, Vector Databases (pgvector)

EXPERIENCE

Software Engineering Intern

May 2024 – July 2025

Dattopant Thengadi Foundation

Hybrid

- Had zero prior experience with production LLM pipelines; learned and deployed an automated AI RAG agent on an Ubuntu VPS using FastAPI and Ollama within 3 weeks.
- Engineered optimized data-fetching algorithms using PHP and JavaScript, reducing server latency and improving global website performance scores by **11%** (from 74 to 85).
- Managed backend deployment state using Uvicorn, PM2, and Nginx, ensuring high availability and secure data handling for concurrent API requests.

TECHNICAL PROJECTS

OpenEnv SOC Analyst Simulator | Python, FastAPI, Docker, CI/CD, System Design

- Architected an autonomous SIEM environment simulator to evaluate LLM-driven incident response agents under strict production constraints.
- Designed a custom mathematical grading engine utilizing a continuous linear decay algorithm to dynamically evaluate latency and edge-case accuracy across multi-step kill chains.
- Streamlined cloud deployment and dependency resolution by containerizing the architecture with Docker and deploying the evaluation server to Hugging Face Spaces.

IEMO (Intelligent Email Organization) | ReactJS, Node.js, LangChain, GCP, Supabase

- Developed a context-aware data processing pipeline using LangChain to parse, filter, and structure highly unstructured, large-scale inbox data streams.
- Ensured secure, scalable application architecture by leveraging Google Cloud Platform (GCP) for OAuth integration and managing relational database state with Supabase (PostgreSQL).

Sportify ML Engine | Python, TensorFlow, MediaPipe, REST APIs

- Deployed a full-stack platform integrating a core machine learning model with a robust FastAPI backend routing system and React-Native frontend.
- Engineered a custom computer vision pipeline utilizing TensorFlow (MoveNet), achieving an **89%** algorithmic accuracy rate in tracking and analyzing high-velocity athletic movements.

Offline-First Fleet Management System | Vanilla-JS, Electron, SQLite3, Tailwind CSS

- Built an offline-first desktop application acting as a centralized data hub for the 15th Battalion, Brigade of the Guards.
- Designed a highly optimized local SQLite3 database schema to handle high-frequency reads/writes for vehicle fleet operations, driver training, and maintenance tracking without internet dependencies.

LEADERSHIP & ACHIEVEMENTS

- **Top 10 Finalist, Adobe Add-on Hackathon:** Built a RAG-based integration for Adobe Express to automate complex design workflows at scale.
- **Finalist, Economic Times Hackathon:** Developed Drishti, a geo-spatial global energy tracker utilizing geospatial data pipelines and a multi-variable constraint optimization algorithm.
- **Co-Founder, HASI Patna:** Directed a 500-person volunteer network during COVID-19, architecting a manual state-management system to verify and route medical leads, directly impacting **200+** lives.