

RAHUL RAMESH OMALUR

Bangalore, Karnataka



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Education

Indraprastha Institute of Information Technology(IITD)

Nov. 2022 – Present

Bachelor of Technology in Computer Science and Artificial Intelligence

New Delhi, Delhi

CGPA: 8.69

Relevant Coursework

- Large Language Models
- Machine Learning
- Computer Networks
- Deep Learning
- Software Development
- Operating Systems
- Natural Language Processing
- MLOps
- Database Management Systems

Experience

TCS Research & Innovation

May 2025 – July 2025

Machine Learning Intern

Thane, Maharashtra

- Preprocessed and analyzed ECG signals and patient metadata using Pandas, scikit-learn, and PyTorch.
- Built predictive models to assess Coronary Artery Disease (CAD) risk in Indian patients using clinical datasets from hospitals across India.

CodePlex Technologies Private Ltd.

May 2024 – July 2024

Software Engineer Intern

Bangalore, Karnataka

- Developed a Laravel-based web application to automate scraping and processing of user-submitted obituary data.
- Migrated legacy datasets using PHP Simple HTML DOM Parser to facilitate efficient cross-platform data transfer.
- Resolved system anomalies to ensure accurate conversion of unstructured web data into structured MySQL repositories.

Projects

Probabilistic Pundit | *Multi-Agent LLMs, Inference, Python, NLP, TOPSIS*

Aug 2025 – Dec 2025

- Developed a "Team of Experts" framework using specialized agents for player and strategy analysis.
- Integrated Gemini, Kimi, and Qwen to synthesize statistics with injury news and community sentiment.
- Built a TOPSIS-based pipeline to filter candidates and assemble squads within strict budget constraints.

QUADRA – Intent-Aware Counterspeech Generation | *LLMs, NLP, Ensembles*

Jan 2025 – May 2025

- Built a modular NLP framework with a shared HateBERT encoder and intent-specific BART decoders.
- Explored fusion techniques (Linear, Cross Attention, Shared Fusion) for intent-aware generation.
- Proposed DialoRank, a zero-shot ranking method; QUADRA outperformed DialoGPT and GPS on all major NLP metrics.

SmartReach AI – Email Campaign Manager | *Django, Next.js, LLMs, Regression*

Jan 2025 – May 2025

- Built a full-stack marketing platform featuring LLM-powered content generation and regression-based send-time optimization.
- Implemented real-time analytics dashboard with compliance to India's DPDP Act (2023).
- Used Django REST API and Next.js frontend for seamless user experience.

Robo Bartender | *ROS2, Python, Computer Vision, NLP, xArm*

Aug 2025 – Dec 2025

- Developed an autonomous bartender using ROS2 to coordinate voice, vision, and robotic control nodes.
- Engineered a real-time NLP pipeline using ElevenLabs and Groq for context-aware cocktail ordering.
- Implemented YOLO11 and xArm motion sequences to detect and pour drinks via voice commands.

Technical Skills

Languages: Python, SQL, Java, C, PHP

AI & Machine Learning: PyTorch, TensorFlow, LangChain, Hugging Face, Multi-Agent Systems, ROS2

Frameworks & Libraries: Pandas, FastAPI, Flask, Django, Laravel, MySQL

Cloud & Tools: AWS, GCP, Groq, Git, Docker, Kafka, Spark

Leadership / Extracurricular

Cyfuse

Feb 2024 - May 2024

Helped develop projects for the CyFuse technical team.

Projects Team & Content Team Member

AudioBytes

November 2025 - Current

Organized various events and helped organize the musical events for our college fest.

Co-ordinator