

SAI RAM S A

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EDUCATION

Manipal School of Information Sciences, MAHE

M. Eng in Big Data Analytics

CGPA: 9.32/10

June 2025 – June 2027

Dayananda Sagar Academy of Technology and Management

B.E. in Information Science & Engineering

CGPA: 8.39/10

June 2020 – June 2024

EXPERIENCE

Drighna Technology

Flutter Developer (Intern)

Feb 2024 – April 2024

Project: Healthcare Management System

- Engineered a healthcare application using Flutter, for hospital operations and patient data management.
- Integrated and optimized RESTful APIs for OPD, IPD, radiology, and appointment scheduling, enhancing data accessibility.
- Implemented a smooth UI/UX to improve application responsiveness.

PROJECTS

Aviation Analytics Pipeline

Python, Apache Spark, Apache Kafka, Apache Airflow, PostgreSQL, MinIO (S3), Docker

Architected and deployed a **Lambda Architecture pipeline** to process both real-time and historical aviation data, combining speed, batch, and serving layers for comprehensive flight analytics.

- Built a **Speed Layer** using Apache Kafka to ingest live flight data from OpenSky Network API every 10 seconds, streaming aircraft positions, altitude, velocity, and flight status across Indian airspace.
- Developed a **Batch Layer** with Apache Spark to process **historical flight data** (2019-2022) for analysis, extracting **flight trajectories** from compressed TAR archives.
- Designed a **medallion architecture** (Bronze/Silver/Gold) on MinIO S3-compatible storage, which supports both **ETL and ELT** workflows.
- Containerized the entire stack using **Docker Compose** with 10+ services (Airflow, Spark, Kafka, Zookeeper, MinIO, PostgreSQL, Metabase).

Campus Recruitment Agentic RAG System

Python, vLLM, FAISS, Sentence-BERT, Qwen-32B, Qwen-7B, OCR, Streamlit, CUDA

Designed and deployed a **multi-agent RAG system** with LLM-powered planning, execution, critique, and synthesis to answer complex placement queries combining **structured facts** and **semantic context**.

- Built an end-to-end ETL pipeline processing **47+ companies' placement documents** (PDFs, images, docs) using **OCR (EasyOCR, Tesseract)** and **LLM-based extraction (Qwen-32B)** to generate structured JSON facts and semantic chunks.
- Implemented **dual indexing architecture**: pandas-based facts index for exact attribute queries (stipend, CGPA, location) and **FAISS vector store** with Sentence-BERT embeddings for semantic retrieval across 8 chunk types.
- Developed **3 specialized RAG tools** (facts lookup, semantic search, company comparison).
- Engineered an **LLM agent orchestrator (Qwen-7B)** with query planning, tool routing, result validation, and response synthesis.

SKILLS

Languages: Python, R.

ML Skills: Supervised and Unsupervised Algorithms, LLMs, Hugging Face, FAISS.

Data Analysis and Manipulation: Pandas, NumPy, Scrappy, BeautifulSoup, PowerBI.

Tools: Linux, MySQL, Airflow, Hadoop, Spark, Docker, Git.

CERTIFICATIONS

ML hackathon on product price prediction

Amazon

Generative ai with large language models by deeplearning.ai

Coursera

AWS Academy Cloud Foundations

AWS

Fundamentals of Agents

HuggingFace