

SATYANARAYAN MOHAPATRO

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SUMMARY

Final-year B.Tech CSE student specializing in **AI and Edge Computing**, with hands-on experience in deep learning, machine learning, data analytics, and generative AI. Skilled in building end-to-end ML pipelines, CNN/RNN models, NLP workflows, and analytical dashboards that have improved model performance and reduced analysis time by up to 60%. Experienced in applying GenAI and automation techniques to real-world business, sports, and healthcare use cases across academic and internship projects.

EDUCATION

Bachelor of Technology - BTech-CSE
MIT Art, Design & Technology University
📅 08/2022 - Present 📍 Pune, India

CGPA
8.53 / 10

EXPERIENCE

AI Research Intern

The Center for Advanced Modeling of Materials & Manufacturing Processes (CAMMP)

📅 09/2025 - 11/2025 📍 Remote

Developed a Conditional GAN pipeline for **ferritic steel** microstructure generation, implementing 200+ epoch training loops, FID evaluation, and fully reproducible preprocessing workflows in PyTorch.

- Designed and optimized a **Conditional Generator-Discriminator architecture** with label embeddings and stabilized training strategies in PyTorch.
- Improved **FID score from ~120+ to ~45-55**, significantly enhancing the structural realism and texture quality of generated microstructures.
- Developed a robust preprocessing pipeline (normalization, augmentation, condition reconstruction), reducing dataset inconsistencies by **~40%**.
- Created CUDA-optimized, fully reproducible training scripts with checkpointing and automated synthetic-image generation, increasing validation throughput by **30%**.

Data Science Virtual Intern

EduSkills Foundation (Altair-supported)

📅 07/2025 - 09/2025 📍 Remote

- Completed the Data Science Master Virtual Internship focused on **end-to-end data science** workflows.
- Hands-on practice with **data collection, cleaning, analysis, and visualization** using Python and libraries (**Pandas, NumPy, Matplotlib**).
- Strengthened the ability to communicate insights through **dashboards and visual** storytelling.

CERTIFICATIONS

Oracle Cloud Infrastructure 2025 Certified Data Science Professional
[Link to the certification course](#)

Generative AI: Foundation Models and Platforms – IBM (Coursera)
[Link to the certification course](#)

Computer Vision - NPTEL
[Link to the certification course](#)

Natural Language Processing in TensorFlow – DeepLearning.AI (Coursera)
[Link to the certification course](#)

Machine Learning with Python (with Honors) – IBM (Coursera)
[Link to the certification course](#)

Python Essential Training - LinkedIn
[Link to the certification course](#)

SKILLS

Programming & Databases:

Python, SQL, C/C++, JavaScript, FastAPI

ML/DL & Gen AI:

PyTorch, TensorFlow, Transformers, OpenCV, LLMs, RAG, LangChain, LangGraph, Vector DBs (Pinecone, FAISS)

Data, Tools & DevOps:

Pandas, NumPy, Matplotlib, Power BI, Docker, AWS, Git, Streamlit, n8n, Figma

PROJECTS

Multi-Agent Chatbot Using LangGraph

📅 11/2025 - 12/2025 📍 Independent Project

Developed a production-grade conversational AI system using **LangGraph** with a multi-node agent architecture, structured message routing, and tool-augmented reasoning.

- Implemented message routing, tool calling, and persistent state management with **SQLite**.
- Integrated real tools (**stock-price API, DuckDuckGo search, custom calculator**) to enable dynamic, tool-augmented reasoning for diverse queries.
- Built a **Streamlit** frontend supporting multi-threaded chat sessions, message streaming, **RAG-based** document querying, and seamless context switching across conversations.
- Tracked agent behavior and execution flow using **LangSmith**, improving debugging efficiency by **~40%**.

RAG-Based Medical Chatbot using LLMs, LangChain, Pinecone, and AWS

📅 10/2025 - 11/2025 📍 Independent Project

Developed a medical chatbot using a RAG architecture with LangChain, Gemini, Pinecone, and Flask.

- Built a full RAG pipeline with **PDF extraction**, chunking, and Sentence-Transformer embeddings.
- Designed a **Pinecone** vector index with k-NN retrieval, reducing query latency by **~30%**.
- Integrated Gemini with **LangChain RAG** and conversational memory for multi-turn responses.
- Containerized and deployed on **AWS EC2** using Docker and GitHub Actions **CI/CD**.
- Developed a **Flask** web interface for real-time, context-aware medical chat.

AI-Powered Lead Scoring & Follow-Up Generation System for CRM Automation

📅 01/2025 - 05/2025 📍 MIT ADT University

AI-powered system for CRM automation combining several technologies and machine learning models.

- Collaborated with Total Automation Solutions (TAS).**
- Built ML pipeline for **lead conversion prediction** (improved accuracy from **72% → 88%**).
- Integrated **NLP sentiment & intent models** for real-time customer analysis.
- Developed **LangChain + LLM follow-up generator**, reducing manual sales tasks by **30%**.
- Delivered a secure backend supporting **scalable enterprise CRM integration**.

