

Satyam Mishra

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SUMMARY

Aspiring AI Engineer with hands-on experience in building multi-agent systems, RAG pipelines, and LLM-based applications. Strong foundation in NLP, Generative AI, and MLOps with practical exposure to backend development, cloud deployment, and source-grounded AI systems.

TECHNICAL SKILLS

Languages: Python, C++, SQL

ML/DL: PyTorch, Scikit-learn, Hugging Face, NLP

GenAI: RAG, LLMs, Multi-Agent Systems, Prompt Engineering, Ollama, OpenAI API, MCP

MLOps & Cloud: Docker, AWS (EC2, S3, ECR), GitHub Actions, MLflow, DVC

Databases: PostgreSQL, MongoDB Atlas, ChromaDB, FAISS

Frameworks: FastAPI, LangChain, LangGraph

Tools: Streamlit, Git, VS Code, Claude Code, Codex

PROJECTS

AI Multi-Agent Research Knowledge Assistant (MARKA) | *Generative AI, RAG, Multi-Agent Systems*

- Developed a multi-agent RAG system combining document retrieval, web search, and research paper extraction to generate accurate, context-aware, and source-grounded answers.
- Designed a hybrid retrieval pipeline where the system first searches uploaded documents using **ChromaDB**, falls back to **Tavily/DDG web search** when context is weak, and triggers **ArXiv MCP** for research-focused queries.
- Implemented specialized agents including Document Agent, Embedding Agent, Retrieval Agent, Web Agent, Research Agent, and Generation Agent for modular orchestration.
- Built adaptive routing logic to dynamically choose between document-only, web-enhanced, research-based, or hybrid response generation, reducing hallucination and improving answer completeness.
- Integrated **FastAPI**, **Llama3 via Groq API**, **PostgreSQL**, and **Firestore Authentication** for backend inference, metadata tracking, chat history, and user-specific document access.

Vehicle Insurance ML System | *End-to-End MLOps*

- Built an end-to-end ML pipeline covering data ingestion, validation, transformation, model training, and deployment.
- Integrated **MongoDB Atlas** → **AWS S3** → **EC2** → **ECR** to simulate a scalable production workflow.
- Implemented **CI/CD using GitHub Actions** to automate Docker image builds and deployment on AWS EC2.
- Developed a Dockerized **FastAPI** application with modular structure, logging, and exception handling.

ATS Resume Score Checker | *NLP & Machine Learning*

- Designed an ATS scoring system using **TF-IDF** and **SBERT embeddings** to measure semantic similarity with job descriptions.
- Combined similarity scores with an **XGBoost classifier** to generate final ATS scores.
- Implemented NLP preprocessing pipelines and built a **Streamlit** web interface for interactive resume analysis.

RESEARCH

Fake News Detection Using Logistic Regression ICAMC 2024

- Achieved 94% training accuracy and 93% testing accuracy using NLP-based classification.
- Built a complete NLP pipeline including lemmatization, stopword removal, and TF-IDF vectorization.
- Presented research at ICAMC 2024, contributing to AI/ML applications in cybersecurity.

ACHIEVEMENTS

- Solved **300+** **DSA problems** on LeetCode and GeeksforGeeks.
- Built multiple GenAI and MLOps projects using real-world deployment pipelines and cloud integration.

EDUCATION

Guru Gobind Singh Indraprastha University

B.Tech in Artificial Intelligence & Machine Learning

2022 – 2026

CGPA: 8.5