

SOUMIK PAL

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SUMMARY

Final-year Computer Science student specializing in agentic AI systems, LLM orchestration, and applied machine learning, with strong foundations in software engineering, system design, and data-driven consulting. Experience building multi-agent architectures with LangGraph, retrieval-augmented generation (RAG) pipelines, and production-style ML services. Seeking roles in ML/AI/GenAI Engineering, Software Development, or Technical Consulting.

EDUCATION

Kalinga Institute of Industrial Technology (KIIT University)

2023 - 2027

B.Tech, Computer Science and Systems Engineering

Bhubaneswar, Odisha

- Relevant Coursework: Data Structures and Algorithms, Operating Systems, Object-Oriented Programming, Database Management Systems (DBMS), Computer Networks, Machine Learning, Artificial Intelligence, Software Engineering

PROJECTS

Autonomous Multi-Agent Stock Trading System

LangGraph, LLaMA 3.1, Groq, Python, RAG, yfinance

- Designed a LangGraph-orchestrated multi-agent system with three specialized agents (Technical, Fundamental, and News Sentiment) coordinated by LLaMA 3.1 via Groq to synthesize multi-signal trading decisions autonomously
- Integrated a Retrieval-Augmented Generation (RAG) knowledge base (rag_db) enabling agents to ground decisions in retrieved financial context, fusing technical indicators, fundamental ratios, and live news sentiment into a single unified BUY / HOLD / SELL signal
- Engineered a production-grade, decoupled agent pipeline where each agent runs independently and feeds structured output to the LLM orchestrator for low-latency, high-accuracy trade signal generation, designed for horizontal scalability and real-time market responsiveness

Agentic AI Course Assistant

LangGraph, ChromaDB, LangChain-Groq, LLaMA 3.3-70b, Streamlit, RAGAS

- Built an 8-node LangGraph StateGraph agentic assistant with a dynamic LLM router dispatching across retrieval, tool-use, and memory-only branches, eliminating hardcoded logic for fully context-driven reasoning
- Engineered a ChromaDB RAG pipeline with a self-reflection evaluation node (auto-retry if faithfulness score is below 0.7), scoring 0.87 faithfulness and 0.84 relevancy on RAGAS, enforcing output quality without human intervention
- Red-teamed the system against 5 adversarial categories (prompt injection, hallucination bait, false premise) using MemorySaver with thread_id session persistence and a 6-message context window; all attacks were neutralized cleanly

AI-Powered ERP Customer Query Copilot

Python, FastAPI, LangGraph, SQL, RAG, Streamlit, Groq LLaMA

- Architected a multi-agent customer-support copilot over a 9-module synthetic manufacturing ERP (orders, inventory, suppliers, invoices, deliveries), with a router agent classifying natural-language queries into SQL, RAG, analytics, or hybrid workflows
- Engineered a read-only NL2SQL agent with query validation and execution guardrails for structured ERP lookups, paired with a document-retrieval agent for warranty terms, product manuals, and policy documents
- Designed a hybrid SQL + RAG workflow to resolve compound queries requiring both live ERP data and enterprise documentation, shipped as a full-stack FastAPI + Streamlit application with automated evaluation and test coverage

TECHNICAL SKILLS

Languages: Python, Java, C, SQL

AI / ML / GenAI: Keras, Scikit-learn, LangChain, LangGraph, RAG, LLMs, NLP, Transformers, Hugging Face, RAGAS, Prompt Engineering, Fine-Tuning, MLOps, Vector Databases (FAISS, ChromaDB), Model Deployment

Software Engineering: Data Structures & Algorithms, OOP, System Design, REST APIs, FastAPI, Flask, Microservices, Distributed Systems, Big Data Frameworks

Databases & Tools: PostgreSQL, Distributed Storage Systems, Docker, Git, GitHub, CI/CD, Linux, Streamlit, Google Colab

Exposure: CI/CD, MLOps, Model Deployment, Docker, TensorFlow, PyTorch

CERTIFICATIONS

- [McKinsey Forward Program, McKinsey & Company](#) • [Agentic AI Certification Course](#)
- [Applied Machine Learning using Python \(AML-Py'25\), NIT Kurukshetra - January 2025](#)