

# SATYAM SINGH

ML & Generative AI Enthusiast | Chemical Engineering Undergraduate

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[Github](#) | [LinkedIn](#) | [Portfolio](#)

## EXPERIENCE

### GenAI Job Simulation Project – Boston Consulting Group (BCG) via Forage

*Virtual Work Experience Program | February 2026*

[Working Video](#) [Github](#)

- Extracted and structured financial data from SEC 10-K filings of Microsoft, Apple, and Tesla, focusing on revenue, net income, total assets, liabilities, and operating cash flow.
- Performed exploratory data analysis (EDA) to identify financial trends, year-over-year growth patterns, and company-level performance comparisons.
- Engineered financial metrics including Profit Margin, Debt Ratio, Revenue Growth, Net Income Growth, Asset Growth, and CFO Margin using structured financial formulas.
- Designed and implemented a Retrieval-Augmented Generation (RAG) financial chatbot using FAISS and LangChain to enable grounded, dataset-restricted responses.
- Developed strict system prompt guardrails to eliminate hallucinations and ensure responses were derived strictly from the dataset context.
- Integrated conversational memory using LangGraph with thread-based state persistence for multi-turn contextual responses.
- Built a professional Streamlit-based UI with streaming LLM responses and structured financial output formatting.
- Deployed the solution using a local LLM (Ollama – Qwen2.5), demonstrating cost-efficient and privacy-preserving AI system design.

## TECHNICAL SKILLS

**Machine Learning:** Regression, Classification, Feature Engineering, Model Evaluation, Collaborative Filtering

**Deep Learning:** ANN, CNN, RNN, LSTM , Backpropagation, Transformers, Transfer Learning

**Generative AI :** Langchain, Retrieval-Augmented Generation (RAG), Prompt Engineering, Ollama, Gemini

**Agentic AI:** LangGraph, Agno, CrewAI, Multi-Agent Systems, MCP (Servers & Clients)

**Computer Vision:** OpenCV, Hand Tracking, Gesture Recognition, Object Detection (YOLO)

**Tools & Libraries:** Python, Numpy, Pandas, Sklearn , Tensorflow, SQL, Streamlit, FastAPI, Docker, GitHub

## PROJECTS

### • End-to-End Agentic Chatbot | Python, LangGraph, LangChain, Ollama, SQLite [Demo](#)

- Built a production-style agentic chatbot with structured workflows, tool calling, and persistent memory
- Used LangGraph for state management and orchestration with local LLM inference via Ollama
- Implemented SQLite-based storage to enable conversation recovery across sessions

### • Chemical Engineering RAG System | LangChain, Ollama, Vector Database, SQLite [Demo](#)

- Developed a domain-specific RAG assistant to answer chemical engineering queries from academic PDFs
- Enforced strict source-grounded responses to prevent hallucinations in technical explanations
- Designed a safety-aware pipeline suitable for academic and engineering reference use

### • AI Story Generator (Multimodal GenAI) | Gemini, Streamlit, Python [Demo](#)

- Built an image-to-story generation system with mood control, narration, and PDF export
- Applied multimodal reasoning to generate coherent long-form narratives from images
- Deployed end-to-end as an interactive web application

## EDUCATION

### B.Tech in Chemical Engineering | JADAVPUR UNIVERSITY

Expected Graduation: 2028

## CERTIFICATIONS

Oracle Professional – Data Science | Oracle Professional – Generative AI | TRYST IIT Delhi – Machine Learning