Archit Aggarwal

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Portfolio
Github
Linkedin

LLM Engineer / Agentic AI Developer

Agentic AI Engineer specializing in full-stack LLM systems, RAG pipelines, and gamified AI product development. Experienced building document-grounded assistants with strict hallucination controls, multi-mode AI orchestration, and production-grade architectures using FastAPI, LangChain, FAISS, and Mistral AI. Proven track record designing session-aware, multi-user backends with JWT authentication, vector store persistence, and structured JSON output validation. Focused on shipping reliable, scalable AI products that solve real learning and automation challenges.

AGENTIC AI & LLM SKILLS

- Agentic AI Systems: Multi-mode LLM orchestration, tool calling, function execution, autonomous agent design
- LLM Frameworks: LangChain, LangGraph, LangChain-Core, Multi-Agent Workflows, Prompt Engineering & Optimization
- RAG & Knowledge Pipelines: FAISS vector stores, Mistral Embeddings, PDF ingestion & chunking, document-grounded retrieval, hallucination control
- Contextual Memory & State: Session-aware memory, persistent FAISS indexes, structured output validation, conversation history management
- AI Models & APIs: Mistral AI (mistral-embed, mistral-large), OpenAI, LLM evaluation & structured JSON output enforcement

TECHNICAL SKILLS

Programming:	Python, FastAPI, Flask, REST APIs, SQL, C++
Agentic AI & LLMs	LangChain, LangGraph, LangChain-Mistral, Sentence-Transformers, FAISS-CPU, PyPDF, Pydantic
Auth & Security	JWT (PyJWT), bcrypt, middleware-based session validation, token-based auth flows
Data & Storage:	SQLite (WAL mode, thread-safe), PostgreSQL, MySQL, Power BI, Excel
Development Tools:	Git, VS Code, PyCharm, Uvicorn, Apache, API Integration

PROJECTS

CourseMateAI   Dec'25 - Feb'26

- Built a RAG study assistant (FastAPI, LangChain, FAISS, Mistral AI) with a PDF ingestion pipeline delivering 4 learning modes — Chat, Notes, Quiz, and Arena — with strict document-grounded responses and hallucination control enforced across all modes.
- Architected a Quiz Mode with MCQ & True/False across 3 difficulty tiers and 2-pass JSON auto-correction, and an Arena Mode featuring AI boss opponents (4 difficulty levels) generated via a 2-stage LLM pipeline.
- Built a gamified progression system with XP, quests, avatar customization, in-app shop, and inventory — enabling long-term engagement rewards tied to learning activity across all modes.
- Implemented a secure multi-user backend with JWT + bcrypt login system, session-aware middleware, thread-safe SQLite (WAL mode), and persistent FAISS indexing for isolated, production-grade user experiences.

MORPHIE-BOT   Sep'24 - Nov'24

- Built an AI-powered website design copilot using Flask and Mistral AI to generate structured themes.
- Implemented mode-controlled AI behavior with session memory to separate conversational and design-based workflows.
- Enforced strict structured output validation to prevent hallucinations and ensure frontend-safe AI responses.
- Designed an interactive UI to visually present color palettes and layout suggestions for real-world design use.

Dynamic SQL Query Automation   Mar'25 - Apr'25

- Built a Flask-based backend system to dynamically generate and execute SQL queries on MySQL databases.
- Implemented robust validation and error-handling mechanisms to ensure safe, reliable, and constraint-aware database operations.
- Designed a modular database helper layer to abstract CRUD logic and improve code maintainability.
- Integrated structured logging to monitor query execution, simplify debugging, and enhance system reliability.

EXPERIENCE

Research and Development Intern   Jul'24 - Aug'24
HAIER Appliances Pvt Ltd

- Designed automated Power BI dashboards integrated with SQL queries, improving reporting speed by 65%.
- Optimized data processing using Python, reducing computation time by 30% and improving performance.

EDUCATION

B.Tech in Electronics and Communication, *Maharaja Surajmal Institute of Technology*	2021 - 2025
Class 12 and Class 10 (CBSE), *Bharti Public School*	till 2021