

Ashutosh Kumar Rao

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OBJECTIVE

Final-year IT undergraduate building agentic AI systems that don't fall apart outside a demo — LangGraph orchestration, hybrid RAG pipelines, multi-agent workflows. Currently contributing to a YC-backed AI agent framework, debugging real production failures across model providers and execution pipelines, not just fine-tuning on Colab notebooks. 1000+ GitHub contributions in, final year hasn't even started.

EDUCATION

Shri Ramswaroop Memorial Engineering College and Management

Bachelor of Technology in Information Technology — CGPA: 7.8/10

Lucknow, UP

july 2023 – may 2027

TECHNICAL SKILLS

Agentic Architecture: LangChain Orchestration, LangGraph Stateful Workflows, Multi-Agent Communication Loops

Generative AI & RAG: Hybrid Retrieval (BM25 + Dense Search), Cross-Encoder Reranking, Citation Enforcement, Ollama

ML / DL Models: Transformers, BERT, GPT Systems, Local SLM Benchmarking, Semantic Context Compaction

Vector Stores & DBs: Supabase pgvector, ChromaDB, FAISS Indexes, PostgreSQL Database Optimization, Drizzle ORM

Core Languages & Tech: Python, TypeScript, JavaScript, FastAPI Backend, Node.js Runtimes, WebSockets, LangSmith Tracing

EXPERIENCE

Open Source Contributor

Mar 2026 – Present

Hive by Aden (YC-backed AI Agent Framework)

- Contributing to Hive's core agent framework, collaborating with the core engineering team on a large-scale production codebase.
- Diagnosed and patched a critical 429 rate-limit silent failure across the backend-to-frontend pipeline — `event_loop.py`, SSE transport, and React workspace components — with the fix currently under maintainer review.
- Debugged unsupported model configs in the Cerebras provider and updated configuration flows for contributor development environments.
- Proposed improvements to model auto-detection for contributor API keys, reducing onboarding friction.

Open Source Contributor

Jan 2026 – Present

GeminiCLI by Google (Tooling & Infra)

- Identified and raised multiple log-based issues improving debugging clarity, error visibility, and developer experience across the CLI toolchain.
- Surfaced silent failures and inconsistent log outputs affecting contributor productivity and local development workflows.

PROJECTS

Forge: Terminal-Based Autonomous AI Coding Agent | *Python, LangGraph, LangChain, WebSockets, pgvector, Claude API* | 

- Engineered a developer-native autonomous workspace executor mapping continuous human prompts into structured script generation workflows across deep internal directories via bidirectional WebSocket communication channels.
- Orchestrated a resilient stateful execution engine utilizing LangGraph and LangChain to maintain complex cyclical operations (*Plan* → *Execute* → *Observe* → *Retry*), establishing a custom compiler validation tool to intercept and self-correct runtime system breaks.
- Designed an auto-indexing document ingest layout transforming codebase trees into highly dense multi-dimensional matrix segments stored in Supabase pgvector arrays using Gemini embeddings to drive precision context injection hooks.

CodeSense AI: Hybrid RAG Multi-Agent Code Review Platform | *FastAPI, LangChain, LangGraph, Tree-sitter, Sentence Transform*

- Developed an enterprise-grade technical scanning ecosystem utilizing LangChain data loaders and LangGraph task routers to fetch grounding data chunks directly from localized reference rules and PEP stylesheets.
- Built a language evaluation router running Tree-sitter Abstract Syntax Tree (AST) parsing libraries to convert file layouts into code maps before processing them through Anthropic Claude and Groq models.
- Implemented comprehensive pipeline transparency tracking via LangSmith tracing suites, completely evaluating prompt performance arrays and decreasing system hallucination rates down to negligible metrics.

ACHIEVEMENTS

- Technical Content** — sharing full-stack and GenAI insights on X (@RaoAshutosh19); detailed READMEs maintained across 59+ GitHub repositories.
- Open Source** — 1000+ GitHub contributions in the past year with consistent PR activity across multiple active projects.
- Generative AI with LangChain** — Udemy certification by Krish Naik covering LangChain, LLM orchestration, and production-ready GenAI pipelines.