Rajgire Akhil Reddy

AI Engineer | Agent Systems, LLM Infrastructure & Applied ML | Paper Accepted @ MMCITRE 2025

linkedin.com/in/r-akhil-reddy-728890319 | r.akhilreddy007@gmail.com | github.com/akhilll0305 | (+91) 9908134804

Education

Dr. Shyam Prasad Mukherjee IIIT Naya Raipur 2024 – 2028

B.Tech, Data Science & Artificial Intelligence | CGPA: 7.53

- Relevant Coursework: Machine Learning, Deep Learning, Reinforcement Learning, AI for Autonomous Systems, Design & Analysis of Algorithms

Skills

Languages & Backend: Python, C++ | Git, GitHub | FastAPI (async REST APIs) | async/concurrency | Docker
LLMs & Agents: LangChain, LangGraph | Tool calling, multi-step agent workflows | Prompt engineering | LoRA / QLoRA fine-tuning
RAG & Retrieval: FAISS, BM25, Hybrid Search, Sentence Transformers | Embedding pipelines | Re-ranking
ML & Deep Learning: Scikit-learn, TensorFlow, PyTorch, Keras | Feature Engineering
Reinforcement Learning: Deep Q-Networks (DQN / DDQN) | Multi-agent RL | Transfer Learning | SUMO
Infra & Tooling: Firebase (Auth, Firestore) | SQLite | Streamlit | Cloud basics (learning)

Project Experience

2D Floor Plan Generation Via Constraint Satisfaction Problem Modeling | **GitHub** | **Paper** *Accepted, MMC*

- Co-authored and presented a hybrid constraint + transformer floor plan generation system, combining CP-SAT constraint solving with the ConsFormer Transformer for constraint-aware spatial layout generation
- Modeled rooms as graph nodes and adjacencies as edges, adapting graph coloring formulations to produce architecturally valid layouts
- Achieved 100% hard-constraint satisfaction on benchmark layouts, demonstrating synergy between symbolic optimization and learned reasoning

Multi-Agent DDQN Traffic Light Control System | **GitHub** *Academic Project | PyTorch, SUMO*

- Built a multi-agent Deep RL system (Double DQN) for traffic light control across a 2×2 intersection grid — achieved **94.3% reduction** in average waiting time vs. fixed-time baseline (141s → 8s)
- Implemented transfer learning from a single-agent pretrained model to a 4-agent network — achieved 68% better per-intersection performance with zero additional training episodes

LUMEN – AI-Powered Personal Finance Platform | **GitHub** **2nd Place** – Hack-A-Sol 2025

- Designed and implemented a RAG-based conversational analytics module using FAISS (IndexFlatL2) and Sentence Transformers (all-MiniLM-L6-v2), supporting natural-language queries over 1,000+ transaction records with sub-second semantic search and context-aware Gemini responses
- Built a real-time SMS transaction ingestion pipeline using n8n webhooks with regex parsing, capturing UPI, IMPS, NEFT, and card alerts from major Indian banks with zero manual input; shipped the full product within a 24-hour hackathon window

StudyAI – AI-Powered Learning Platform | **GitHub** **3rd Place** – APIhub.digital 2025

- Built a multimodal AI learning platform converting PDFs, images, audio, and video into flashcards, quizzes, and summaries using Gemini and LangChain, with Document Q&A via hybrid retrieval (FAISS + BM25) for grounded responses
- Designed persistent learning workflows tracking document state and artifact-regeneration history; implemented OAuth2/JWT authentication for multi-user collaborative study groups (built as part of a 4-person team)

Certifications

LLM Engineering – Building Production-Ready LLM Applications March 2026

Udemy | Instructor: Ed Donner | 8-week program, 8 production LLM applications built

Leadership & Initiatives

AIML Club – Core Member August 2025 – July 2026

- Organized AI/ML workshops, hackathons, and hands-on sessions for 100+ students; coordinated technical events including the India AI Impact Summit 2026