Karthik Babu

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Education

University of Macau **August 2026 – May 2028**
M.Sc in DataScience-Artificial Intelligence Applications *Macau, China*

Central University of Rajasthan **August 2019 – May 2023**
B.Tech in Electronics and Communication Engineering *Rajasthan, India*

Profile

AI Engineer with hands-on experience building and deploying Generative AI systems in enterprise environments. Strong background in LLM-based applications, RAG pipelines, data engineering, and automation. Currently working at ADP on production GenAI solutions that improve operational efficiency, data quality validation, and internal support workflows at scale. Currently **Pursuing an M.Sc. in Data Science-Artificial Intelligence Applications at the University of Macau** (2026–2028), with coursework spanning intelligent systems, neural networks, machine learning, prognostics, autonomous vehicles, and applied AI in engineering domains.

Skills

Languages: Python, SQL
Generative AI: LLMs, RAG, LangChain, Hugging Face, FAISS, Prompt Engineering, Vector Search
ML & NLP: BERT, T5, LSTM, CNN, RNN, NER, Text Classification
Frameworks & Libraries: TensorFlow, NumPy, Pandas, Scikit-learn
Backend & APIs: FastAPI, REST APIs, Pydantic
Cloud & DevOps: AWS (Lambda, ECS/EKS, Bedrock, SageMaker), Docker, CI/CD, Git
Data: ETL Pipelines, Data Validation, Data Migration, Data Quality Checks

Work Experience

Member Technical (AI Engineer) **Mar 2024 – July 2026**
ADP *Hyderabad, India*

- Designing and deploying enterprise-scale Generative AI solutions to automate internal support and data workflows.
- Built production-grade Retrieval-Augmented Generation (RAG) systems using OpenAI embeddings and vector databases to answer HR and Payroll-related queries grounded in internal knowledge.
- Developed intelligent data validation and reconciliation automation using LLMs to detect anomalies and reduce manual checks during large-scale data migrations.
- Implemented AI agents for call transcript analysis and summarization using NLP pipelines and LLMs, automating post-call documentation and follow-ups.
- Integrated GenAI solutions with existing ETL pipelines handling HR and Payroll data from PeopleSoft, SAP, UKG, Oracle, and Paycom.
- Worked closely with business, QA, and platform teams to evaluate GenAI outputs, reduce hallucinations, and improve reliability for production use.

Data Scientist (Intern) **Oct 2023 – Feb 2024**
Faclon Labs *Mumbai, India*

- Built end-to-end data and ML pipelines for industrial analytics use cases using Python and FastAPI.
- Worked on Tata steel and Grasim steamtraps, developed data pipelines, pre-processing, data manipulation, calculated the steam loss and saved 34 percent of the steam for the organization
- Developed a real-time energy analytics solution for Aditya Birla Group, resulting in a significant 20 percent reduction in energy costs

Software Engineer **Feb 2023 – Oct 2023**
Laxven Systems *Hyderabad, India*

- Performed thorough code reviews and led User Acceptance Testing (UAT), verifying software performance,reliability, and user-centric design quality.
- Developed and maintained low-level drivers for communication protocols like I2C, SPI, and UART, ensuring robust hardware-software interfacing.

Projects

Enterprise RAG System for Insurance Claim Processing **2026**

Personal Project

- Designed an enterprise-grade RAG system to automate insurance claim analysis using policy documents, regulations, and customer history.
- Implemented both Self-RAG and Agentic RAG architectures to handle simple and complex claim queries.
- Built custom tools for document retrieval, claim history lookup, regulatory checks, approval rules, and deadline calculation.
- Demonstrated trade-offs between latency, cost, and accuracy, and proposed a hybrid routing approach for production use.

Entrepreneurial Experience

Founder & AI Consultant – NinePlusAI **May 2026 – Present**

www.nineplusai.com — AI Automation & Digital Transformation Agency *Remote*

- Founded NinePlusAI, an AI-first consulting and development agency focused on helping businesses leverage Generative AI, intelligent automation, and custom AI solutions to improve operational efficiency and business growth.
- Delivering end-to-end AI services including AI chatbot development, Retrieval-Augmented Generation (RAG) systems, AI agents, business process automation, AI-powered analytics dashboards, and intelligent website development.
- Designing custom AI solutions tailored to client workflows, integrating Large Language Models (LLMs), knowledge systems, automation pipelines, and enterprise data sources to streamline decision-making and reduce manual effort.
- Leading solution architecture, technical implementation, client consulting, and AI strategy development across multiple business domains.
- Building scalable AI systems that transform business operations through intelligent automation, real-time insights, and AI-driven customer engagement.

Certifications

- AWS – Generative AI with LLMs
- Google Data Analytics Professional Certificate