Manikanta Ruppa

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Summary

Innovative GenAI Senior Data Scientist with strong expertise in agentic AI and multi-LLM orchestration, specializing in building scalable, production-grade generative AI systems. Spearheaded **10+** high-impact PoCs with **85%+** success rates, deploying multi-agent workflows that enabled intelligent automation across enterprise use cases. Proven track record of architecting cloud-deployed AI solutions that reduced operational costs by **40%** and accelerated time-to-market by **60%**.

Education

Indian Institute of Information Technology and Management October 2020 – June 2022
Master of Science in Computer Science with specialization in Machine Intelligence *Thiruvananthapuram, Kerala*

Technical Skills

Languages & Core ML: Python, SQL, Machine Learning, Deep Learning, Natural Language Processing, Unsupervised Learning, Regression, Classification, Time Series Forecasting, Statistical Analysis, Model Evaluation, XGBoost

GenAI & Agentic Frameworks: LangChain, LangGraph, AutoGen, CrewAI, Prompt Engineering, Google ADK

LLM Ecosystem & Training: OpenAI, Anthropic, DeepSeek, vLLM, Ollama, LLaMA-3, Qwen, Mistral, Hugging Face, SFT, DPO, QLoRA, Multimodal LLMs

Python Libraries & CV: NumPy, Pandas, Scikit-learn, PyTorch, TensorFlow, OpenCV, Regular Expressions

Databases & Vector Stores: MySQL, MongoDB, Elasticsearch, Vector Databases (Embedding & Semantic Retrieval), Milvus, ChromaDB

Cloud, MLOps & Deployment: Azure, AWS Bedrock, Amazon SageMaker, ECS Fargate, AWS Lambda, MLflow, MLOps, LLMOps, CI/CD, Docker, Git, FastAPI, Celery, RAG, Streamlit

Experience

NewGen Software July 2023 – Present
Senior Data Scientist *Gurugram, Haryana*

- Spearheaded the development of a **Generative AI-powered low-code platform**, simplified complex AI models, and improved model accuracy by **20%** for industry-specific applications.
- Conducted in-depth research to solve **5+** business-critical problems, collaborated with **3+ cross-functional teams**, and translated technical insights into business solutions, **driving a 15% gain in operational efficiency.**
- Led the optimization of domain-specific **multimodal LLMs** through targeted fine-tuning, achieved a **30%** performance improvement, and reduced inference latency by **15%**.

Number Theory July 2022 - July 2023
AI/ML Solution Analyst *Gurugram, Haryana*

- Engineered **10+ new deep learning and NLP components** for a **low-code platform**, enhanced platform capabilities, and delivered a **10% increase** in processing accuracy.
- Identified and **resolved system bottlenecks** by rigorously testing **50+** components, strengthened system stability, and cut platform **downtime by 25%** through targeted troubleshooting.
- Leveraged **CTGAN** to generate **10 million** realistic tabular data samples with **83% similarity**, optimizing model training time from **22 hours to 4 hours** through data and model parallelism.

Neurolaxy LLC December 2021 - June 2022
Computer Vision Engineer (Intern) *Remote*

- Designed a **Jetson Nano–based computer vision system** for object detection, tracking, and distance estimation, achieving **98%** accuracy and reducing hand-tracking latency by **40%** to support neurostimulation-based rehabilitation.
- Implemented data analytics to **track patient progress**, leading to a **15%** improvement in rehabilitation plans.

Projects

TravelBuddy - Multi-Agent Travel Intelligence System Ongoing

- Architected a multi-agent orchestration system using **Model Context Protocol (MCP)** and **LangGraph** to coordinate **3 specialized AI agents**, reducing travel planning time from **6+** hours to **15 minutes** and achieving **96.7%** intent classification accuracy.
- Engineered **Redis-cached parallel workflows** and integrated **5+ APIs** with robust error handling and **LangSmith observability**, achieving **sub-2-second latency**, **98.5% success rate**, and **60% fewer API calls**.

Publications

Using Object Detection to Select Grasp Type and Control Functional Electrical Stimulation for Hand Rehabilitation May 2023

 DOI🔗

Nikunj Arunkumar Bhagat, *Manikanta Ruppa*