

Jitesh Rachamadugu

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Professional Summary

AI Engineer specializing in **Generative AI, cloud platforms, and distributed data systems**. Experienced in building **AI solutions on AWS, Azure, and GCP (Vertex AI, Gemini, Vertex Search, Compute Engine, Cloud Functions)** with a focus on **scalability, data quality, and automation**. Skilled in **deep learning, NLP, and model deployment**, with strengths in **collaboration and adaptability**.

Education

Gandhi Institute of Technology and Management (GITAM), Hyderabad, India May 2025
Bachelor of Technology in Computer Science — CGPA: **7.86**
Completed relevant coursework in Machine Learning, Artificial Intelligence, Data Structures, Algorithms, Database Systems, and Operating Systems

Professional Experience

Artificial Intelligence Development Intern Jan 2025 – Mar 2025
HSBC, Pune, India

- Built and deployed an **LLM chatbot pipeline** with Salesforce APIs on Azure, cutting query resolution time by **40%**.
- Fine-tuned Falcon-7B with LoRA adapters on 120k+ transcripts, embedding compliance policies to reduce non-compliant outputs.
- Designed multilingual intent recognition (**10+ languages**) with embeddings, enabling global accessibility.
- Migrated compliance datasets into **Azure SQL**, optimizing query performance for structured data analysis.
- Enhanced **Azure DevOps CI/CD** with rollbacks, coverage thresholds, and predictive failure modeling, achieving **zero deployment failures**.
- Collaborated with cross-functional teams to deliver multiple compliance initiatives with improved efficiency.

Artificial Intelligence Research Intern May 2024 – Sep 2024
IIITDM Kurnool, India

- Developed a **hybrid pathfinding algorithm** validated on ROS robots in obstacle-rich environments, improving navigation efficiency by **20%**.
- Collaborated with peers to optimize algorithms, validate simulations, and **reduce runtime by 25%**.
- Built a benchmarking framework (C++/Python) with **auditable validation checks**, reducing approval cycle time by **70%**.
- Documented findings and contributed to **3+ projects**, improving clarity in reports by **30%**.

Key Projects

Real-Time Fraud Detection System Oct 2024 – Dec 2024

- Deployed fraud detection with **AWS SageMaker and scikit-learn**, achieving sub-**500ms inference latency**.
- Integrated **AWS RDS** as a feature store with real-time validation checks to support fraud inference.
- Containerized with **Docker** and automated CI/CD (GitHub Actions) for rapid deployment.
- Partnered with fraud teams to **reduce false positives by 18%** and improve trust in results.

Enterprise-Scale RAG Pipeline for Aerospace Systems Apr 2025 – May 2025

- Built a **RAG system** for 50k+ aerospace documents using **FAISS and Milvus**, improving retrieval accuracy by **35%**.
- Implemented structured and unstructured **ETL pipelines** with validation, strengthening **data quality checks**.
- Deployed with **Kubernetes on Azure**, ensuring secure access control and audit readiness.
- Scaled across clusters with **Databricks and Apache Spark**, ensuring reliable distributed processing.

Generative AI Document Search on Vertex AI (Gemini) Jun 2025 – Aug 2025

- Built a **RAG-based knowledge search system** using **Gemini and Vertex AI Search** to query large-scale financial documents.
- Deployed endpoints on **Vertex AI** with **Compute Engine for scaling** and **Cloud Functions for automation triggers**.
- Improved retrieval accuracy by **30%** and reduced response latency, supporting faster data-driven decisions.
- Implemented monitoring dashboards with **Prometheus and Grafana** for latency, usage, and compliance tracking.

Tech Stack

- Programming and Databases:** Python, Java, C/C++, C#, JavaScript (React, Node.js), SQL, FAISS, Milvus, Azure SQL, GCP Cloud SQL, AWS RDS, Snowflake
- AI/ML:** PyTorch, TensorFlow, JAX, Hugging Face Transformers, RAG, LangChain, LoRA/PEFT, RLHF, BERT, Falcon-7B, SHAP, LIME, Gemini APIs, Vertex AI Search
- MLOps and Cloud:** AWS SageMaker, GCP Vertex AI (Generative AI, Gemini), GCP Compute Engine, GCP Cloud Functions, GCP Cloud Storage, Azure AKS, Kubeflow, GitOps, Docker, Terraform, CI/CD, CloudWatch, Prometheus, Grafana
- Big Data and ETL:** Databricks, Apache Spark, Apache Airflow, ETL/ELT pipelines, Data Warehousing
- Other:** OpenCV, ROS, Whisper, Streamlit, N8N, Cursor, Replit, Vercel

Certifications

- Oracle AI Vector Search Certified Professional**
- Oracle Cloud Infrastructure Generative AI Professional**

Achievements and Core Skills

- Winner – HSBC Hackathon 2024 (**5,000+ applicants**) — Demonstrated strong **problem-solving** and **analytical thinking**.
- Best Presentation – Spring Startup Sprint 2024 — Recognized for clear **communication, adaptability**, and effective **collaboration**.
- Best Research Paper – GITAM Ideathon 2024 — Showcased advanced **analytical thinking** and research-driven **problem-solving**.
- 3rd Place – UI/UX Hackathon, IIIT Hyderabad 2025 (**4,000+ participants**) — Applied **creativity, collaboration**, and eagerness to learn in design.