

# Jitesh Rachamadugu

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## OBJECTIVE

Generative AI Developer focused on **Vertex AI (Gemini, Vertex AI Search/Grounding)**, **Python**, and **end-to-end ML on Google Cloud**. Experienced building **RAG chatbots, AI services, and model endpoints** with GCP primitives (**Cloud Storage, Cloud Run/Functions, Pub/Sub, Compute Engine, BigQuery**). Passionate about shipping production-grade AI with strong MLOps and reliability.

## EDUCATION

**Gandhi Institute of Technology and Management (GITAM)**

May 2021 – May 2025

B.Tech in Computer Science — CGPA: 7.86

Relevant coursework: Machine Learning, Artificial Intelligence, Data Science, NLP, Distributed Systems

## WORK EXPERIENCE

**Artificial Intelligence Development Intern**

Jan 2025 – Mar 2025

*HSBC, Pune (Hybrid)*

- Built an **enterprise AI chatbot** (Salesforce-integrated) with embeddings and guardrails; cut average query resolution time by **40%**.
- Applied **prompt engineering + fine-tuning** to improve response reliability by **25%** across 10+ languages (incl. CJK, Arabic).
- Deployed optimized inference services on secure **cloud infrastructure** with observability (latency/error SLOs) and autoscaling.

**Artificial Intelligence Research Intern**

May 2024 – Sep 2024

*IIITDM Kurnool*

- Designed a **pathfinding agent** with dynamic obstacle avoidance; improved navigation efficiency by **40%** vs. A\*/BFS/Dijkstra.
- Ran **100+ simulations**, reducing runtime by **25%** and improving coverage by **35%**; authored technical report.

## ACADEMIC & FREELANCE PROJECTS

**Enterprise RAG Chatbot on Vertex AI (Finance Domain)**

Aug 2024 – Dec 2024

- Implemented a **RAG pipeline** using **Vertex AI (Gemini)**, **Vertex AI Search/Grounding**, and **text-embedding-004**.
- Indexed docs from **Cloud Storage** into a vector-backed search; chunking + metadata filters; guarded with safety filters.
- Served a **chat endpoint** via **Cloud Run** (FastAPI) behind **API Gateway/Cloud Endpoints**; secrets via **Secret Manager**.
- CI/CD with **Cloud Build**; logging/metrics to **Cloud Logging + Cloud Monitoring**; reduced false retrievals by **22%**.

**Real-time Fraud Detection Pipeline (GCP)**

Jun 2024 – Jul 2024

- Ingested transactions via **Pub/Sub**; streaming feature engineering on **Dataflow**; online features in **BigQuery/Redis**.
- Trained XGBoost on **Vertex AI Training**; deployed model to **Vertex AI Endpoints** with A/B traffic splitting.
- Built alerting workflow with **Cloud Functions** and **Eventarc**; **SLO-based autoscaling** on Cloud Run; ROC-AUC of **0.94**.

**Multimodal Disaster Response Intelligence (Vertex + Cloud Run)**

Jul 2025 – Aug 2025

- Combined **satellite image segmentation** (SegFormer/SAM on **Vertex AI custom training**) with **text signals** for impact scoring.
- Served **multimodal inference** via **Cloud Run**; artifacts in **Cloud Storage**; dashboards in **Looker Studio**.
- Optimized inference latency by **28%** with model quantization and batch scheduling; added human-in-the-loop review.

## TECHNICAL SKILLS

- Languages**: Python (primary), SQL; Java/JS (working), C++ (working)
- Generative AI**: **Vertex AI (Gemini)**, Vertex AI Search/Grounding, Prompt Engineering, RAG, Guardrails, Evaluation
- ML/DL**: TensorFlow, PyTorch, XGBoost, scikit-learn, **JAX (familiar)**; training/tuning on Vertex AI
- GCP**: **Vertex AI**, Cloud Run, Cloud Functions, Cloud Storage, Pub/Sub, BigQuery, Secret Manager, Cloud Build, Monitoring/Logging
- Vector & Retrieval**: Vertex AI Search, FAISS/Elasticsearch (experience), embedding models (**text-embedding-004**, GTR)
- APIs & Services**: REST/gRPC, FastAPI, OAuth2/APIs via API Gateway/Endpoints; IaC/CI/CD with Terraform/Cloud Build
- MLOps**: Experiment tracking, model registry, canary/A-B deploys, autoscaling, observability (latency/error budgets)

## ACHIEVEMENTS

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- Among 26 winners at the **HSBC Hackathon 2024**, selected from over 4500 applicants. Developed a model for real-time fraud detection, earning recognition from HSBC and T-Hub.
- Secured the **Best Presentation Award** at the **Spring Startup Sprint 2024**.
- Nominated and won the **Best Research Paper Award** at the 2024 **GITAM IDEATHON Undergraduate Research Event**.
- Participated in the **Generative AI-Powered Apps Workshop** at IIT Hyderabad.
- Attended **Google Developer Student Clubs DEV Fest 22**.

## PERSONAL DETAILS

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- **Date of Birth:** 23<sup>rd</sup> April 2003
- **Address:** H.No 1-8-215/3, NIRD Road, Rajendranagar, Hyderabad, Telangana, India 500030
- **Languages:** English, Hindi, Telugu
- **Nationality:** Indian