Madhav Madupu

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Professional Summary

AI & Automation Engineer (Risk & Enterprise Systems) and **TensorFlow & Google Cloud Contributor** specializing in high-throughput data pipelines, deterministic workflow orchestration, and enterprise risk-compliant AI. Proven track record at **PwC** architecting mission-critical reconciliation, capacity forecasting, and telemetry platforms for **Fortune 10 operations** with 100% SLA data integrity and zero-trust data sovereignty.

Experience

PricewaterhouseCoopers (PwC) — July 2026 – Present

AI & Automation Engineer | Risk Consulting & Fortune 10 Client Operations — *Hyderabad, Telangana*

- Spearhead AI and workflow automation engineering within Risk Consulting for a **premier Fortune 10 global client**, architecting four proprietary enterprise platforms to govern high-volume operational and analytical workflows.
- Engineered automated duration-review and parametric tracking engines to orchestrate enterprise capacity forecasting, directory-level resource reconciliation, and auditable real-time telemetry across multi-region teams.
- Designed resilient, fault-tolerant data pipelines integrating Python, serverless cloud execution, and deterministic LLM validation to eliminate manual bottlenecks and enforce 100% SLA compliance at scale.

LNS Solutions Inc — May 2025 – October 2025

Software Engineering Intern (High-Throughput Data Systems – Fortune 500 Partner) — *Remote*

- Architected data-intensive systems and **real-time observability tools** for global enterprise operations (DHL partner), visualizing high-velocity transactional streams with 100% data consistency.
- Optimized high-throughput Python APIs to process million-scale payloads, reducing end-to-end system latency and hardening data ingestion patterns for mission-critical enterprise services.
- Implemented fault-tolerant tracking features and automated Git-based CI/CD governance, reducing production bug resolution time by 25%.

Frost Interactive Services — June 2024 – January 2025

Data Analytics & Software Development Intern — *Hyderabad, Telangana*

- Built automated ETL data pipelines and executive analytics dashboards leveraging MongoDB aggregation and Python to process high-volume operational statistics for real-time risk and stakeholder decision-making.
- Led a 10+ member agile team to develop full-stack platforms using WebSockets for low-latency data propagation and RESTful microservices.

Open Source Contributions

TensorFlow (Google) — Jan 2026

Official Contributor | GitHub PR #108476 — *Remote*

- Engineered compile-time parameter validation and diagnostic error handling for **XLA/JIT compilation** within `tf.image.extract_patches`, preventing runtime failures in high-performance compute pipelines.

Google Cloud Platform (Vertex AI) — Jan 2026 – Present

Python Docs Contributor | official-samples — *Remote*

- Authored production-ready enterprise samples for **Vertex AI Agent Engine**, enabling structured, auditable, and stateful agentic workflows across regulated cloud environments.

Projects

LOCO: Air-Gapped Enterprise RAG Engine | *Python, Next.js 15, LanceDB, Ollama*

- Architected a zero-trust, local-only RAG engine eliminating third-party cloud dependencies to guarantee 100% data sovereignty and regulatory compliance for confidential financial and enterprise documents.
- Engineered a **Semantic Chunking engine** splitting text on thematic boundaries, achieving high retrieval precision via LanceDB hybrid vector-keyword search.

Syntave AI & Syntave Hub | *Python, FastAPI, PostgreSQL (Supabase), GCP Cloud Run, AWS Bedrock*

- Architected a unified AI orchestration hub to govern complex machine learning pipelines, deterministic model routing, and cloud-native deployment workflows.
- Engineered high-concurrency backend microservices using FastAPI and PostgreSQL to support low-latency inference, automated audit telemetry, and strict access controls.

BLACKBIRD: Graph Analytics & Predictive Intelligence Engine | *Python, Graph Databases, FastAPI*

- Designed an intelligence platform incorporating multi-hop knowledge graph mapping, entity relationship profiling, and predictive analytics engines for complex risk and decision modeling.
- Integrated multi-agent reasoning pipelines to synthesize unstructured telemetry into structured, auditable decision graphs in real time.

Technical Skills

Backend, Data & Quantitative Systems: Python (FastAPI, Flask), Go, SQL (PostgreSQL), BigQuery, MongoDB, High-Throughput APIs, ETL Pipelines, Data Observability, Resource Reconciliation, WebSockets
Enterprise AI & Governance: Deterministic LLM Workflows, LangGraph, RAG, LanceDB, TensorFlow (XLA), PyTorch, Air-Gapped/Zero-Trust AI, Gemini API, Claude
Cloud, DevOps & Infrastructure: AWS (Bedrock, Lambda), GCP (Vertex AI, Cloud Run), Docker, Kubernetes, CI/CD, Supabase, Linux, Git

Education

ACE Engineering College **November 2022 – May 2026**
Bachelor of Technology (B.Tech) in Internet of Things / Computer Science & Engineering *Hyderabad, Telangana*

Certifications & Leadership

Certifications: Anthropic Claude Certified Architect – Foundations (2026), Google AI Specialization (2026), AWS Cloud Practitioner, Google Cloud Generative AI, Oracle Cloud GenAI Professional.
Leadership & Awards: **1st Place Winner** – Google DeepMind AI Hackathon (2026); **1st Place Winner** – Technical Quiz at GDG DevFest Hyderabad 2026; **License Holder & Lead Organizer** – TEDx ACE Engineering College Season 2 (March 2026).