

Sai Yasaswini Majety

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Work Authorization: Approved H-4 EAD (Unrestricted U.S. Work Authorization : No Visa Sponsorship Needed)

Professional Summary

Senior Backend and Cloud Infrastructure Engineer with **6+ years of production experience** designing, deploying, and hardening high-availability distributed systems, airborne fleet telemetry pipelines, and cloud developer platforms. Proven track record across **5.7+ continuous years at Viasat Inc.**, progressing through **4 engineering cadres via rapid merit promotions (Intern → SWE I → SWE II → Senior SWE - I)**. Sustained Five-Nines platform availability (**99.999% SLA**) across **1,000+ commercial aircraft** (Delta Air Lines) while executing zero-downtime AWS database migrations across Multi-AZ RDS clusters and engineering automated TLS and OAuth 2.0 security gateways. Co-inventor on published Indian Patent **202541026299** for modular deep learning architectures with parameter-efficient adapter routing. Authorized to work for any U.S. employer without visa sponsorship (Approved H-4 EAD through August 2028).

Technical Skills

Backend & Microservices: Python (FastAPI, Flask, Django), Go, RESTful APIs, gRPC, Event-Driven Architecture, Microservices Design, Asynchronous Programming, High-Throughput Request Routing
Cloud Infrastructure & DevOps: AWS (ECS, RDS Aurora/PostgreSQL/MySQL, CloudFormation, S3, IAM, CloudWatch, KMS), Docker, Kubernetes, Jenkins CI/CD, Terraform / IaC, Linux/Unix Systems Administration
Security & Identity Governance: OAuth 2.0, Okta, SAML 2.0, Automated TLS/SSL X.509 Certificate Lifecycle, HashiCorp Vault, AWS Secrets Manager, Least-Privilege IAM Access Controls, Regulated Audit Trails
Databases & Distributed Caching: AWS RDS PostgreSQL, MySQL Multi-AZ, MariaDB, Redis In-Memory Cache, Flyway Idempotent Schema Migrations, Sphinx Full-Text Search
Telemetry & Streaming Systems: Real-Time Fleet Telemetry Ingestion, Store-and-Forward Edge Queues, Message Brokers (Kafka, MQTT, Kinesis Patterns), Health Heartbeats, Backpressure Mitigation
Testing & Observability: Pytest, Robot Framework, Postman API Automation, End-to-End Regression Suites, CloudWatch Alarms and Dashboards, Synthetic Endpoint Monitoring
AI Platforms & Data Engineering: Retrieval-Augmented Generation (RAG), Parameter-Efficient Adapter Routing, FAISS Vector Indexing, Hugging Face, LangChain, Streamlit

Professional Experience

Independent Applied Research

Houston, TX (Remote)

AI Systems & Cloud Infrastructure Researcher

Mar 2024 - Present

- Co-authored published Indian Patent **202541026299** for modular deep learning architectures, achieving an **80% compute reduction** in incremental fine-tuning by designing dynamic parameter-efficient adapter routing.
- Engineered high-throughput RAG microservices in **Python FastAPI** using LiteLLM proxy routing and semantic vector caching, bounding P95 retrieval latency to **sub-20ms** across 5,000+ benchmarked technical queries.
- Authored modular **Terraform** blueprints and Dockerized microservice pipelines for automated multi-tier cloud deployments with strict IAM least-privilege boundary policies and zero-trust validation.

Viasat Inc. / Viasat India Private Limited

Chennai, India

Senior Software Engineer - I (Backend & Cloud Infrastructure)

Jan 2023 - Feb 2024

- Commercial Aviation Network Access & Fleet Telemetry Platform:** Core ground-to-air connectivity platform delivering wireless access, passenger portals, and real-time fleet telemetry across **1,000+ commercial aircraft** (Delta Air Lines fleets).
- Sustained **99.999% Five-Nines SLA** across 1,000+ aircraft by engineering asynchronous Python FastAPI gateways and distributed Redis caching layers handling real-time passenger access control and telemetry synchronization.
- Eliminated customer downtime during multi-terabyte transactional database upgrades by executing **zero-downtime live schema migrations** across Multi-AZ AWS RDS MySQL clusters (v5.6 to 5.7 and 8.0).
- Automated enterprise TLS/SSL certificate lifecycle across **150+ edge gateways and endpoints**, eliminating manual renewals and preventing outage vulnerabilities (**Viasat Spotlight Award**).
- Designed decoupled OAuth 2.0 and SAML/Okta identity gateway routing, reducing partner airline onboarding time from **3 weeks to 2 days (Viasat Architecture Commendation)**.
- Hardened in-flight fleet connectivity across intermittent satellite links by implementing exponential backoff retry algorithms, store-and-forward edge queues, and synthetic health-check heartbeats.

Viasat Inc. / Viasat India Private Limited

Chennai, India

Software Engineer II (Cloud Platform & API Microservices)

Jan 2021 - Dec 2022

- Accelerated multi-region cloud deployment velocity by **65% (from 4 hours to 45 minutes MTTR)** by authoring modular AWS CloudFormation IaC templates and declarative Jenkins CI/CD pipelines.
- Elevated test coverage across critical billing, telemetry, and authentication paths from **60% to >92%** by architecting automated Pytest suites and mock network failure harnesses.
- Engineered automated database backup validation, failover health checks, and cross-region replication monitoring across enterprise AWS RDS instances.
- Awarded the **2021 Chairman & CEO Mark Dankberg Performance Bonus** for high-impact infrastructure delivery.

Viasat Inc. / Viasat India Private Limited

Chennai, India

Software Engineer I (Distributed Systems & Tooling Automation)

Jun 2018 - Dec 2020

- **Commercial Air PAT (Pipeline Observability & Quality Dashboard):** Engineered real-time observability platform in Python Flask and React aggregating telemetry, build execution times, and defect trends across **50+ Jenkins nodes**.
- Reduced release cycle verification latency by **40%** by implementing automated quality gates and release telemetry dashboards.
- Standardized release quality gates by programming automated pre-merge regression verification pipelines in Groovy, preventing breaking API regressions from reaching staging environments.
- Authored comprehensive regression test suites spanning frontend UI and backend handshakes using **Robot Framework**, executing **100+ automated test scenarios per release candidate**.
- **1st Place Winner (2019):** Won 1st place in Viasat Global IoT Hackathon (1st of 24 international engineering teams).

Viasat Inc. / Viasat India Private Limited

Chennai, India

Software Engineer Intern (Talent Systems & Search Automation)

Jan 2018 - May 2018

- **CandEx 2.0 Platform (Internal Talent Operations & Search Engine):** Architected and deployed automated enterprise candidate evaluation platform adopted company-wide across Viasat HR and technical hiring teams.
- Accelerated technical resume search query response times from **3.2s to <180ms** by integrating Sphinx full-text search engine and Apache Solr with Python Django microservices across 10,000+ candidate profiles.
- Engineered high-throughput bulk resume parsing workflows in Django, automating applicant ingestion and interview invitations.
- Recognized with formal **Viasat Leadership Appreciation Award** and received direct conversion offer to full-time SWE I.

Patents & Systems Contributions

Modular Deep Learning Architecture for Cross-Domain Transfer and Incremental Learning

Indian Patent Office (IPO) : Application No. 202541026299 (Published in The Patent Office Journal No. 13/2025)

Co-inventor of a parameter-efficient adapter architecture enabling deep neural networks to dynamically route representations across disparate cross-domain distributions without catastrophic forgetting (80% compute reduction).

Open-Source GenAI Platforms (rag-hf-chatbot & Contextual Tool Assistant): Engineered interactive document RAG systems using Hugging Face embeddings, FAISS vector indexing (sub-200ms semantic retrieval), and modular OpenAI tool-calling gateways.

Certifications & Technical Honors

- **Viasat Spotlight Award (2023):** Automated TLS/SSL Edge Security and X.509 Certificate Infrastructure Lifecycle
- **2x CEO Performance Bonuses:** Awarded by Viasat Chairman & CEO Mark Dankberg for outstanding operational impact
- **Viasat Architecture Commendation (2022):** Architecture and Delivery of OAuth 2.0 & Enterprise Identity Gateway
- **Viasat Engineering Excellence (2022):** Zero-Downtime Multi-AZ Cloud Database Migration and Clustering
- **1st Place Winner (2019):** Viasat IoT & Cloud Telemetry Enterprise Hackathon (1st of 24 international teams)
- **Dean's Merit Scholarship (2016 - 2017):** Top 3% Academic Distinction, SASTRA Deemed University

Education

SASTRA Deemed University

Thanjavur, India

Bachelor of Technology (B.Tech) in Electrical and Electronics Engineering (EEE)

Aug 2014 - May 2018

- **Academic Distinction:** Cumulative GPA: **8.2 / 10.0** | Recipient of **Dean's Merit Scholarship** (Top 3% cohort ranking).
- **Core Coursework:** Microprocessor & Microcontroller Architectures, Control Systems, Data Structures, OOP (Python, C++), Relational Databases & SQL.
- **Campus Leadership:** Technical Infrastructure & Workshop Organizer, DAKSH National Techno-Management Fest.