Sai Sri Harsha Guddati

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EDUCATION

University of Florida *Jan. 2024 – Dec. 2025*
Master of Science in Computer Science, GPA: 3.9/4.0 Gainesville, FL
Relevant Coursework: Distributed Systems, Advanced Data Structures and Algorithms, Database Management Systems, Operating Systems, Cloud Computing, Software Engineering

WORK EXPERIENCE

University of Florida, Information Technology *May 2025 – Dec. 2025*
Software Engineer Intern (Distributed Systems) Gainesville, FL

- Designed and operated **distributed backend services** supporting internal AI and analytics platforms used by **30,000+ users**, handling **100K+ requests/day** with predictable latency.
- Built **asynchronous processing pipelines** using **FastAPI**, **Celery**, and **Redis**, decoupling request handling from background computation to improve system throughput and resilience.
- Reduced tail latency by tracing request lifecycles across API, worker, and database layers; optimized **PostgreSQL connection pooling** and query execution, lowering **P95 latency from 800ms to 480ms**.
- Migrated stateful services from **bare-metal deployments** to **Kubernetes (AKS)**, improving fault isolation, deployment consistency, and recovery from node-level failures.
- Implemented **enterprise authentication** using **OIDC and SAML**, enabling secure single sign-on and role-based access control across distributed services.
- Improved system reliability by introducing caching and idempotent request handling, reducing duplicate processing and stabilizing behavior under retry storms.

Tata Consultancy Services *Aug. 2022 – Dec. 2023*
Software Development Engineer Hyderabad, India

- Developed and operated **distributed backend services** using **Java Spring Boot** and **C#/.NET** for enterprise platforms supporting **thousands of daily active users** across multiple business units.
- Designed **RESTful APIs** with strong input validation, idempotency, and backward compatibility guarantees, enabling parallel development across frontend, integration, and reporting teams.
- Owned **end-to-end CI/CD pipelines** using **GitLab CI**, automating builds, tests, and multi-environment deployments; supported **weekly production releases** with **zero Sev-1 incidents** over a 12-month period.
- Reduced deployment and rollback errors by **standardizing release workflows** and eliminating manual steps, cutting release-related failures by approximately **70%**.
- Built and optimized **background processing jobs** for data ingestion and transformation, ensuring predictable execution under peak load without impacting user-facing APIs.
- Worked extensively with **PostgreSQL and MSSQL** databases containing **10M+ records**, tuning indexes and execution plans to reduce average API response times by **50%**.

PROJECTS

- **ProTerminal: Real-Time Crypto Trading Platform** — *FastAPI, Kafka, Redis, Docker*
  - Built a **real-time distributed data processing system** ingesting high-frequency trade streams from **Binance WebSocket APIs** (BTC, ETH, SOL), handling thousands of events per minute with low-latency fan-out.
  - Designed an **event-driven architecture** using **Kafka** for durable ingestion and **Redis Pub/Sub** for real-time downstream delivery, decoupling producers from consumers and preventing backpressure.
  - Implemented **asynchronous processing services** in **FastAPI** to compute whale trade signals and **entropy-based anomaly detection** without blocking the ingestion pipeline.
  - Containerized the system using **Docker**, enabling reproducible local deployment of streaming, caching, and application services.

TECHNICAL SKILLS

Languages: Python, Java, C#/.NET, Bash, SQL
Backend Systems: FastAPI, Spring Boot, ASP.NET Core
Async & Messaging: Apache Kafka (streams), Redis (Pub/Sub, cache), Celery
API & Auth: REST APIs, OIDC, SAML

Containers & Orchestration: Docker, Kubernetes (AKS), Helm
IaC & CI/CD: Terraform, Ansible, GitLab CI, GitHub Actions
Datastores: PostgreSQL, MSSQL, Redis
Observability: Prometheus, Grafana, Azure Monitor, ELK Stack