

Maanvith Sai Ennam

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EDUCATION

- **JNTUA College of Engineering Kalikiri** Kalikiri, Andhra Pradesh
Bachelor of Technology - Computer Science and Engineering; GPA: 8.1
Courses: Operating Systems, Data Structures, Networking, Databases
July 2020 - June 2024

SKILLS SUMMARY

- **Languages:** C++, Java.
- **Frameworks:** Spring Boot, Spring MVC, Spring Data JPA, Hibernate.
- **Databases:** PostgreSQL, MongoDB, Redis, MySQL.
- **Tools:** Kubernetes, Docker, Git, Kafka, gRPC, Websockets.
- **Platforms:** Linux, AWS.

EXPERIENCE

- **Tata Consultancy Services (TCS)** Bangalore
System Engineer – Backend Development (Krafton Client)
Jan 2025 - Present
 - **Real-Time Messaging & Calling Platform (Android Application):**
 - * Built a real-time chat and calling system supporting **100K+ daily users** using microservices
 - * Owned development of messaging features including replies, media handling, deletions, and authentication; developed **10+ REST APIs**
 - * Implemented WebSocket-based real-time messaging, reducing latency by **~30%**
 - * Designed call lifecycle handling (initiation, cancellation, missed calls) processing **thousands of events/day**
 - * Integrated Kafka (**50K+ events/day**) and Redis caching, improving response time by **~25%**
 - * Containerized services using **Docker** and deployed on **Azure Kubernetes Service (AKS)** ensuring scalability and high availability
 - * Worked with **Microsoft Azure** for cloud deployment, monitoring, and resource management
 - **Enterprise Voice Communication SDK:**
 - * Developed an enterprise-grade real-time voice communication platform supporting millions of concurrent users.
 - * Built backend microservices for Authentication, Room Management, Participant Management, Moderation, and Broadcast workflows handling 50K+ requests/sec.
 - * Implemented secure multi-tenant authentication using HMAC signatures and JWT-based authorization.
 - * Developed REST APIs and WebSocket-based services for room management, participant lifecycle, presence tracking, and real-time event delivery.
 - * Integrated LiveKit and implemented webhook-driven event processing for room and participant state synchronization.
 - * Designed a scalable stage-and-subroom architecture enabling large-scale audio broadcasting across publisher and subscriber groups.
 - * Leveraged Kafka, Redis, and gRPC for event-driven processing, distributed communication, and real-time state management.
 - * Deployed and maintained services on Azure Kubernetes Service (AKS) with monitoring and reliability improvements.
 - **AI-Assisted Development & Productivity Optimization:**
 - * Utilized GitHub Copilot and Claude Code to accelerate backend development, debugging, and testing workflows.
 - * Built custom AI agents to automate repetitive engineering tasks and improve developer productivity.
 - * Applied prompt engineering techniques to improve code generation quality and reduce development effort.
 - **Technologies:** Java, Spring Boot, Kafka, WebSockets, Redis, PostgreSQL, Microservices, gRPC, DDD, WebRTC, Azure, ACS, Docker, Kubernetes (AKS), LLMs, GitHub Copilot, Claude

PROJECTS

- **Vendor–Customer Management System (Client–Master Architecture)** : Developed a Spring Boot application with separate Client and Master modules, where the Master service handled core business logic and database operations, and the Client module provided a user-facing interface using Thymeleaf. Implemented REST-based inter-module communication using RestTemplate to simulate a microservice-style architecture. Vendors can manage products and inventory, while customers browse products and place orders, with order processing and inventory checks handled transactionally using an SQL database.
Tech: Java, Spring Boot, Spring Data JPA, REST APIs, Thymeleaf, SQL
- **Event-Driven Order Processing System (Microservices):** : Built a microservices-based system with User, Order, and Inventory services communicating asynchronously via Apache Kafka. Implemented event-based workflows to process orders and manage inventory with clear event contracts, enabling loose coupling and failure isolation. Services were developed using Spring Boot and orchestrated locally using Docker Compose.
Tech: Java, Spring Boot, Apache Kafka, Docker Compose, REST APIs

ACHIEVEMENTS

- **Developed a realtime app:** Developed a **real-time carpooling application** that was actively used by **local taxi drivers** around the college campus.
- **Ranked 3rd:** JNTUA Cod-a-thon, competing among 500+ participants.