

Tejaswar Reddy Kusam

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EXPERIENCE

Research and Software Development Engineer

Dec 2023 – Present

Vassar Labs PVT Ltd.

Hyderabad, TG

- Developed and managed **100+ RESTful APIs using Java and Spring Boot** for farmer plot/crop workflows, advisory modules, and analytics for a platform serving **1M+ farmers in Kerala**.
- Integrated **third-party APIs**, including **ONDC (Open Network for Digital Commerce) using Beckn Protocol** for seller-side E-MarketPlace operations and **PDS Ration Card API** for farmer ration card retrieval, enabling seamless data transfer and enhancing application functionality across service workflows.
- Led the backend engineering team for Kerala's **Onam Market 2026** digital platform, supporting **1,074 markets** and enabling **205K+ customer transactions worth ₹59.5M** across the platform.
- Engineered and productionized an end-to-end **Easebuzz UPI payment workflow** for Kerala's Onam Market 2026, processing **80K+ UPI transactions worth ₹25.6M** through Easebuzz dynamic QR payments, asynchronous webhooks, idempotent payment processing, real-time SSE status updates, and automated reconciliation.
- Enhanced backend performance by **optimising data delivery APIs, reducing response time by 50–80%** through minimising database communications, **indexing** and **efficient query design**.
- Designed and developed **ETL workflows** to extract **5M+ records** of farmer services data from PostgreSQL, transform it, and store it in **Cassandra**, improving near real-time analytics by **60%**, enhancing live insights.
- Reduced human intervention by **95%** by automating resource-intensive tasks using **Quartz** for scheduling, **Kafka** for message delivery, and **Flink** for large-scale parallel data processing.
- Implemented **JWT-based authentication** and **role-based access control (RBAC)** to prevent unauthorized access, along with input validation filters to reject malicious inputs, including command-injection attempts and JavaScript-based attacks, strengthening application security.
- Implemented **Nginx-based rate limiting** at the production gateway layer to mitigate API abuse and request-flooding attacks, while preventing traffic spikes from overwhelming backend services and improving application security, resilience, and availability.
- Configured and maintained a **Prometheus-Grafana monitoring stack** for Linux VMs and Spring Boot applications, including metrics collection, dashboard configuration, and infrastructure monitoring.
- Built a **WhatsApp Chatbot** in Java, enabling farmers to access ID cards, Plant Doctor, and crop advisories with session handling, option pagination, typing indicators, and interactive messaging flows to improve end-user support and engagement.
- Implemented basic **CI/CD workflows in Jenkins** to automate application builds and deployments, reducing manual effort and making deployments easier.
- Integrated **Claude Code** into the daily development workflow by configuring task-specific custom subagents, improving development efficiency across coding, debugging, code analysis, and technical documentation.
- Implemented **multicast batch-wise push notifications** using Firebase API for crop advisories, pest alerts, and sowing advisories, replacing one-at-a-time delivery and reducing notification dispatch time by **80%**.
- Created **materialised views** for application analytics to pre-compute and store query results, reducing **real-time data** fetching time by **90%** and improving dashboard response times.

Research and Software Development Intern

Jun 2023 - Dec 2023

Vassar Labs PVT Ltd

Hyderabad, TG

- Automated system monitoring and recovery using **Bash and Python scripts** to improve system runtime and reduce manual maintenance effort.
- Designed **PostgreSQL table schemas** with proper constraints and indexing to improve data consistency.
- Enhanced system reliability through **bug fixes, dependency updates** and collaborated with cross-functional teams for smooth backend integration.

TECHNICAL SKILLS

Languages & Frameworks: Python, Java, Bash, SQL, HTML, Spring Boot, REST API

Developer Tools: Maven, Git, GitHub, IntelliJ, VS Code, Nginx, Postman, Linux, Claude Code

CI/CD & Monitoring: Docker, Jenkins, Grafana, Prometheus

Databases: PostgreSQL, Cassandra, MySQL

Core Concepts: Data Structures, Object-Oriented Programming(OOPS), JWT Authentication, RBAC

EDUCATION

Rajiv Gandhi University of Knowledge Technologies – IIIT R.K. Valley

Kadapa, AP

Computer Science and Engineering (B.Tech) - CGPA: 8.55/10

Jun 2019 - May 2023