Jayaraj Japagal

DevOps & Platform Engineer

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PROFESSIONAL SUMMARY

DevOps and Platform Engineer with 6+ years of experience in CI/CD platform development, release engineering, backend services, and engineering automation. Experienced in Python, FastAPI, GitLab CI/CD, Jenkins, Docker, Kubernetes, PostgreSQL, and AWS cloud technologies. Proven track record of building scalable automation solutions, developer productivity platforms, and operational analytics systems in enterprise environments. Strong interest in cloud-native architectures, distributed systems, platform engineering, and AI-powered engineering solutions.

SKILLS

Programming & Backend
- Python, SQL, FastAPI, REST APIs, SQLAlchemy

Cloud & Infrastructure
- AWS (EKS, ECR, EC2, VPC, Route53)

Architecture & Design
- Microservices Architecture, Cloud-Native Applications, API Design, System Design Fundamentals

Building Expertise In
- Cloud & Platform Architecture
- System Design & Distributed Systems
- Kubernetes & Cloud-Native Technologies
- Observability & Reliability Engineering
- Retrieval-Augmented Generation (RAG)
- AI Agents & Engineering Automation

DevOps & Platform Engineering
- GitLab CI/CD, Jenkins, Docker

Databases & Caching
- PostgreSQL, Redis, Database Design, Query Optimization

AI & Engineering Automation
- AI-Assisted Engineering Workflows, Engineering Automation, Developer Productivity Solutions

WORK EXPERIENCE

Mercedes Benz Research and Development India

10/2023 – Present
Bengaluru, India

CI/CD & Release Engineering

- Designed and developed internal DevOps automation platforms supporting large-scale CI/CD and release engineering workflows for Android Automotive and Yocto-based systems.
- Built centralised pipeline orchestration and release management solutions, including duplicate pipeline cancellation, release workflow automation, and release process standardisation to improve CI/CD efficiency and operational stability.

- Developed an AI-assisted release letter generation system that automatically creates structured release summaries after successful release approvals, significantly reducing manual effort and improving documentation quality.
- Developed developer-centric automation tools using Python, FastAPI, Jenkins, and GitLab CI/CD, reducing manual troubleshooting effort and improving engineering productivity.
- Architected and developed the CI/CD Intelligence platform using PostgreSQL and Python.
- Designed relational database modeling, optimized query systems, scalable backend services, and unified release analytics across Gerrit, GitLab, Jira, and pipeline ecosystems.

AI & MCP-Based Engineering Automation

- Currently developing MCP (Model Context Protocol) based AI engineering assistants integrated with developer tooling to automate pipeline diagnostics, release analysis, and CI/CD troubleshooting workflows.
- Implemented prototype integrations with GitHub Copilot and AI-assisted workflows enabling developers to analyse CI/CD failures, inspect pipeline logs, correlate source code changes, and accelerate issue resolution directly from the development environment.

Monitoring & Observability

- Created Grafana dashboards and operational analytics solutions providing real-time visibility into pipeline health, release status, and engineering metrics.
- Enabled proactive issue detection and operational monitoring through centralized observability and automation-driven reporting systems.

Global collaboration

- Worked closely with global engineering teams during onsite engagements in Germany to define CI/CD automation strategies, release engineering workflows, and platform modernization initiatives.

Tata Consultancy Services (TCS) 01/2020 – 10/2023
Bengaluru, India

DevOps Engineer Team Lead

- Led a DevOps team delivering automation and operational solutions across multiple client engagements.
- Solr8 Web Application: Developed a web page displaying cluster details, collections, shards, replicas, status, leader replica, and replication factor. The UI allows for quick fixes of inactive or duplicate replicas with a single button
- Troubleshooting and Monitoring: Managed application failures and production emergencies. Monitored servers and applications to ensure 100% uptime using tools like Splunk, Hubble, and Grafana

Python Development

- API Development: Developed a Python-based API service designed to manage Solr clusters effectively, providing streamlined operations and enhanced control
- Developed Python APIs for Solr cluster operations, offline indexing, checksum validation, and deployment automation.
- Disk Utilization Reporting: Implemented a feature to generate comprehensive disk utilization reports for the entire cluster, aiding in capacity planning and resource management

- Package Deployment: Created an RPM package for the Python codebase, facilitating easy deployment and execution on the server
- Technical Skills/Tools: Python, REST API, and Visual Studio to build and deploy the application, ensuring robust performance and maintainability

PROJECTS

Cloud-Native E-Commerce Platform | Personal Project

Technologies: Python, FastAPI, PostgreSQL, Redis, Docker, Kubernetes, AWS, Terraform, GitLab CI/CD, SQS/Kafka, RAG

Description:
Designed and developed a cloud-native microservices-based e-commerce platform to gain hands-on experience in modern software architecture, DevOps practices, AWS infrastructure, and AI-powered operational workflows.

Key Contributions
- Designed and implemented independent microservices for authentication, product management, and order processing using FastAPI and PostgreSQL.
- Built containerised deployment workflows using Docker and orchestrated services using Kubernetes.
- Automated testing and deployment processes through GitLab CI/CD pipelines.
- Provisioned and managed cloud infrastructure using Terraform and AWS services including VPC, EKS, ECR, Route53, RDS, and ElasticCache.
- Implemented distributed system patterns using caching, asynchronous messaging, and service-to-service communication.
- Integrated Redis caching to improve application performance and reduce database load.
- Implemented event-driven communication patterns using Kafka/SQS concepts for order processing workflows.
- Designed observability and monitoring foundations for application and infrastructure visibility.
- Exploring Retrieval-Augmented Generation (RAG) and AI-powered operational workflows to enable intelligent incident investigation, knowledge retrieval, and engineering assistance.

Concepts Applied
- Microservices Architecture
- Cloud-Native Application Design
- Kubernetes & Container Orchestration
- Infrastructure as Code (Terraform)
- CI/CD & DevOps Automation
- Distributed Systems Fundamentals
- AWS Networking (VPC, Subnets, Route Tables, NAT Gateway, Internet Gateway)
- Caching & Messaging Patterns
- System Design & Scalability
- AI-Assisted Engineering Workflows

EDUCATION

RNSIT college, *B.Tech* (*Electronic and Instrumentation Engineering*) 06/2015 – 08/2019
Bengaluru, India