

# Akshay Rathod

## Software Engineer | DevOps | Python Backend Developer

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### Professional Summary

Software Engineer with 2.3 years of experience in Machine Learning, Computer Vision, and Python Backend Development. Skilled in Python, PyTorch, and OpenCV for deep learning models (object detection, segmentation, OCR). Experienced in building and deploying RESTful APIs and cloud-native microservices on GCP using Docker and Kubernetes, with strong focus on scalability, performance, and production reliability.

### Technical Skills

Languages: Python

Frameworks/Libraries: FastAPI, Flask, PyTorch, OpenCV, Detectron2

DevOps: Docker, Kubernetes, GCP, AWS, GitHub, CI/CD, Jenkins

Databases: MySQL, MongoDB

Tools: Git, Linux, RabbitMQ, Celery

### Professional Experience

*Software Engineer — Insightzz (MLIT-18 Technologies Pvt Ltd).* Apr 2024 – Sep 2025 Pune

**Wagon Inspection System**, a real-time railway wagon inspection system built using GPU acceleration and Python backend services to automate visual defect detection and generate inspection reports.

- Built and deployed real-time inference pipelines using PyTorch, Detectron2, OpenCV, and CUDA, enabling GPU-accelerated defect detection.
- Designed and implemented Python-based microservices using FastAPI for end-to-end system orchestration and API-driven configuration.
- Developed OCR-based text recognition for automated wagon number reporting.
- Deployed GPU optimized inference pipelines on GCP with Docker and Kubernetes.
- Developed FastAPI-based RESTful APIs using asynchronous I/O for high-performance processing and integrated Faster R-CNN and Instance Segmentation models with backend.

**Tata Steel AI Surface Detection**, an AI-driven industrial inspection system for detecting surface defects on steel coils in Tata Steel's manufacturing line using real-time video analytics.

- Closely deployed the steel coil inspection system with client and hardware teams.
- Developed and maintained full backend and frontend code of the system.
- Integrated PLC and hardware components.
- Performed data annotation and modelling, increasing accuracy by 30%.

*Software Developer — CodeArray Technologies Pvt Ltd*

Dec 2022 – Aug 2023 Mumbai

**Medisetter Doctor Network**, a social media app for healthcare practitioners in EN and VI.

- Developed Flask-based RESTful APIs and microservices architecture with Celery & RabbitMQ.
- Managed staging and production deployments on GCP, improving release cycles by 50% via CI/CD automation.
- Containerized and deployed applications on GKE, Compute Engine, and EC2.
- Implemented application monitoring, logging, and performance optimization strategies.
- Setup production infra on GCP and integrated Cloud CDN, boosting performance by 65%.

### Education

B.Sc. Information Technology — University of Mumbai (2020)

### Certifications

- Introduction to Containers, Kubernetes & OpenShift V2 – IBM (2024)
- Docker Essentials: A Developer Introduction – IBM (2024)
- Docker Training Course for the Absolute Beginner – KodeKloud (2023)
- DevOps Pre-Requisite Course – KodeKloud (2023)