

# HARSHA VARDHAN YELLELA

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## SUMMARY

**DevOps Engineer** with hands-on experience in **Kubernetes orchestration**, **CI/CD pipeline development**, and **Infrastructure as Code (Terraform, CloudFormation)**. Proficient in **Docker containerization**, **AWS cloud services (EKS, ECS, Lambda)**, and **monitoring solutions (Prometheus, Grafana)**. Built production systems with **autoscaling (HPA)**, **circuit breaker patterns**, and **8-microservice architectures**. Strong foundation in **automation**, **GitOps workflows**, and **reliability engineering**.

## EXPERIENCE

### Graduate Research Assistant – Agentic AI

Jan 2025 – Present

Lawrence Technological University

Southfield, MI

- Deployed **persistent backend services** on **AWS Fargate** and **Amazon EKS**, managing container orchestration and service mesh configurations.
- Configured **OpenSearch Serverless** clusters for semantic search, implementing **auto-scaling policies** and **access control**.
- Built **CI/CD pipelines** for multi-agent systems using **GitHub Actions**, achieving **70% reduction in deployment time**.

### Infor India Pvt. Ltd.

Apr 2022 – Dec 2023

LN Technical Consultant

Hyderabad, India

- Integrated **AWS S3, Lambda, and API Gateway** with **Infor ION** process flows for asynchronous file transfer and event-driven automation.
- Containerized** business logic services using **Docker** and simulated **Kubernetes-like orchestration** with enterprise systems.
- Developed **automation scripts** for global clients (**Ferrari, Boeing, Triumph**), reducing **batch processing delays by ~40%**.

## TECHNICAL SKILLS

- Container Orchestration:** Kubernetes (EKS), Docker, Docker Compose, Helm | HPA, PVC, Deployments, Services
- CI/CD:** Jenkins (Multibranch Pipelines), GitHub Actions, GitOps | Automated Testing, Deployment Strategies
- Infrastructure as Code:** Terraform, AWS CloudFormation, AWS CDK | State Management, Modular Configurations
- Cloud (AWS):** EKS, ECS Fargate, Lambda, EC2, API Gateway, S3, DynamoDB, ECR, SQS, SNS, ALB
- Monitoring & Observability:** Prometheus, Grafana, CloudWatch | Metrics, Alerting, Dashboards, Log Aggregation
- Scripting & Languages:** Bash, Python, Go, YAML | Shell Scripting, Automation, Configuration Management
- Reliability Patterns:** Circuit Breaker, Health Checks (Readiness/Liveness), Auto-scaling, Spot Instances
- Practices:** GitOps, Agile/Scrum, Infrastructure Automation, Security Best Practices, Cost Optimization

## PROJECTS

### Telegram Toxicity Moderator – Production K8s ML Platform

Oct 2024 – Nov 2024

Kubernetes (EKS), Prometheus, Grafana, FastAPI, HPA, ALB | [GitHub](#)

- Deployed **ML inference service** on **AWS EKS** with **Horizontal Pod Autoscaler (HPA)** achieving **500 RPS average, 1500 RPS peak capacity**.
- Implemented **circuit breaker pattern** (5 failures, 30s recovery window) with **readiness/liveness probes** for production reliability.
- Created **Prometheus metrics** and **Grafana dashboards** for real-time monitoring; reduced costs **70%** with **spot instances** and aggressive scale-down.

### ML Sentiment Feedback Loop – Production MLOps Microservices

Nov 2024 – Present

Terraform, GitHub Actions, AWS (ECS Fargate, SageMaker, ECR), Docker | [GitHub](#)

- Built **8-microservice architecture** with **independent scaling** on **AWS ECS Fargate**, implementing **API Gateway** for unified routing.
- Configured **GitHub Actions CI/CD** with **Terraform IaC** for automated infrastructure provisioning and container deployments to **ECR**.
- Designed **auto-deployment pipeline** (training → model registry → production) with **SNS notifications** and **SageMaker integration**.

### Online Learning Portal – Microservices CI/CD Platform

Oct 2024 – Nov 2024

Jenkins, Docker, Kubernetes, AWS (ECS Fargate, ECR, ALB) | [GitHub](#)

- Implemented **Jenkins Multibranch Pipeline** with **branch-per-service CI strategy**, enabling independent Docker builds for **6 microservices**.
- Created **unified CD pipeline** for **EKS deployment** with **LoadBalancer service** configuration and **automated Docker builds** with commit hash tagging.
- Designed **Kubernetes manifests** for all services with **webhook automation** for continuous integration triggers.

**Lambda Microservices Platform – Serverless Infrastructure**  
*AWS Lambda, Terraform, CloudFormation, DynamoDB, API Gateway, S3*

- Developed and deployed **94 AWS Lambda functions** for complete SaaS platform using **Terraform** and **CloudFormation** templates.
- Built **automated deployment pipeline** with **Git change detection**, deploying only modified functions to reduce deployment time.
- Configured **API Gateway** with **Lambda integrations**, **DynamoDB streams**, and **S3 event triggers** for event-driven architecture.

2024

**Car Dealer App – Full-Stack Kubernetes Application**  
*Kubernetes, Docker, PostgreSQL, Flask, Nginx | [GitHub](#)*

- Configured **3-tier Kubernetes architecture** with **Deployments**, **Services**, **PersistentVolumeClaims** and **2 replicas** for high availability.
- Implemented **readiness/liveness probes** for health monitoring and **LoadBalancer service** for external traffic routing.
- Wrote **comprehensive shell scripts** for **deployment automation** including build, push, and rollout commands.

Oct 2024

**Job Portal REST API – Containerized Cloud Deployment**  
*Docker, Docker Compose, AWS ECS/ECR, FastAPI, GitHub Actions | [GitHub](#)*

- Containerized application using **Docker** and **Docker Compose** with **persistent named volumes** for data durability across restarts.
- Deployed to **AWS cloud infrastructure** using **ECR** for container registry and **ECS** for orchestration with end-to-end **CI/CD pipeline**.
- Built **production-ready API** with **25+ endpoints**, comprehensive **OpenAPI/Swagger documentation**, and **shell scripting automation**.

Oct 2024 – Present

EDUCATION

**Lawrence Technological University**  
*Master of Science in Computer Science · GPA: 3.6/4.0*

- Relevant Coursework:** Cloud Microservices, Machine Learning, Artificial Intelligence, Intelligent Robotics (ROS)

Expected Dec 2025  
Southfield, MI

**Geethanjali College of Engineering & Technology**  
*Bachelor of Technology in Computer Science & Engineering · GPA: 7.5/10 (~3.0/4.0)*

- Relevant Coursework:** Software Engineering, Operating Systems, Computer Networks, Database Management

Graduated: August 2022  
Hyderabad, Telangana

ACHIEVEMENTS

- Selected for Amazon Nova AI Challenge: Trusted AI Track** (2025)
- Built production SaaS platform** with 94 Lambda functions and Terraform IaC serving real customers (2024)
- Gold Medalist in Indian National Mathematical Olympiad (INMO)** (2012)