

ALAVALAPATI VIGNATHA

Information Technology Graduate

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Summary

DevOps Engineer with hands-on experience in building end-to-end CI/CD pipelines using Jenkins, Docker, and Kubernetes on AWS. Skilled in Infrastructure as Code (Terraform), configuration management (Ansible), container orchestration, and Linux administration. Reduced deployment time by 80% and automated 90% of manual release processes. Strong foundation in Python and machine learning model development with experience in building scalable, high-availability cloud-native applications.

Skills

DevOps & Cloud: Jenkins, CI/CD, Docker, Kubernetes, AWS (EC2, EKS, S3), Terraform (Infrastructure as Code), Ansible

Containerization & Orchestration: Docker, Kubernetes (Pods, Deployments, Services, Rolling Updates)

Programming & Scripting: Python, Shell Scripting, Java (Basic)

Data & ML: Pandas, NumPy, Scikit-learn, CatBoost, Isolation Forest

Operating Systems & Tools: Linux (Ubuntu), Git, GitHub, VS Code, Jupyter Notebook

Projects

End-to-End CI/CD Pipeline using Jenkins, Docker & Kubernetes

June 2025 - Present

Designed and implemented a fully automated CI/CD pipeline to deploy a multi-tier (Flask backend + Nginx frontend) web application on AWS EC2 (t2.medium, Ubuntu 22.04) using Jenkins, Docker, and Kubernetes (Minisub).

Tools: Jenkins, Docker, Kubernetes, GitHub, AWS EC2, Terraform, Ansible, Linux, Shell Scripting

Key Achievements:

- Built a 6-stage Jenkins pipeline (Clone → Build → Dockside → Push → Deploy → Validate), reducing manual deployment effort by 90%.
- Integrated GitHub webhooks to enable automated builds, cutting release time from 30 minutes to under 5 minutes.
- Containerized applications using Docker and deployed on Kubernetes with 2 backend and 2 frontend replicas, ensuring high availability and zero-downtime rolling updates.
- Exposed services via Node Ports (30080, 30081) and validated deployments using automated health checks.
- Provisioned AWS infrastructure (2 vCPU, 4GB RAM) using Terraform (IaC) and automated configuration with Ansible, reducing setup time by 70%.
- Achieved a fully automated workflow from GitHub → Docker Hub → Kubernetes, improving deployment reliability and scalability.

Healthcare Insurance Fraud Detection Using Machine Learning,

Academic Project - B. Tech – Information Technology

- Designed and developed a machine learning-based system to detect fraudulent healthcare insurance claims.
- Implemented Cat Boost classifier to accurately classify claims as fraudulent or genuine, handling categorical data efficiently.
- Used Isolation Forest for anomaly detection to identify rare and suspicious claim patterns.
- Performed data preprocessing including handling missing values, label encoding, feature scaling, and class imbalance handling.
- Applied feature engineering and feature selection to improve model accuracy and reduce overfitting.
- Evaluated models using Accuracy, Precision, Recall, F1-score, Confusion Matrix, and ROC-AUC.
- Built an end-to-end fraud detection pipeline from data ingestion to prediction and evaluation.
- Developed a basic user interface for claim input and fraud result display.
- Tools & Technologies: Python, Pandas, NumPy, Scikit-learn, CatBoost, Matplotlib, VS Code, Jupyter Notebook.
- Outcome:**
- Improved fraud detection accuracy and reduced false positives, enhancing claim verification efficiency.

Education

Sree Vidyanikethan Engineering College, Tirupati

B. Tech – Information Technology - CGPA: - 8.5/ 10.00

Andhra Pradesh

12/2021 - 08/2025

Certificates

AWS Cloud Computing Virtual Internship April 2024 - June 2024

Salesforce Administrator Internship April 2023 - May 2023

Languages Known

English, Telugu, Hindi