NAME: Vinodh Machireddy
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PROFESSIONAL SUMMARY:

*Senior MLOps Engineer with 7 years of experience designing and managing end-to-end machine learning lifecycle in Kubernetes environments. Experienced in building scalable ML pipelines using **Kubeflow Pipelines**, implementing experiment tracking and model registry with **MLflow**, and deploying production-grade models using **ArgoCD and KServe**.*

*Strong expertise in setting up monitoring and alerting using **Prometheus and Grafana** to ensure model performance and reliability. Hands-on experience in implementing CI/CD automation using **GitHub Actions** for seamless model integration, testing, and deployment.*

A. Designed and deployed production-grade ML model serving using **KServe**, **Istio**, **Knative**, and **Kubernetes**

B. Implemented InferenceService with Predictor, Transformer, and Explainer for enterprise-grade deployments

C. Served models from **Amazon S3 storage**, ensuring secure and centralized model management

D. Enabled auto-scaling, traffic splitting (canary rollout), and blue-green deployments

E. Built **EV Battery Fault Classification** pipeline detecting degradation, Overhearing faults, and charging faults

F. Integrated **Alibi Explainability** to meet safety & compliance requirements.

G. Designed and orchestrated scalable **Kubeflow Pipelines** to automate the ML lifecycle including data preprocessing, model training, evaluation, and artefact generation in a Kubernetes environment.

H. **Automated pipeline triggers** using KFP SDK and recurring runs to enable continuous retraining based on data drift or scheduled intervals.

I. **Refactored monolithic Python scripts** into modular, containerised **KFP components** using the `@dsl.component` decorator, improving code reusability and maintainability.

J. Built Kubeflow Pipelines using Python **DSL** and compiled them into Kubernetes-native YAML workflows for automated model training and deployment.

K. Built **CI/CD pipelines** using **GitHub Actions** to automate code validation, container image builds, testing, and deployment of ML services to Kubernetes, ensuring faster and reliable releases.

L. **Orchestrated Continuous Training (CT) workflows** that automatically trigger model retraining on GitHub Runners when new ground-truth data is pushed to the repository.

M. **Integrated CML (Continuous Machine Learning)** into GitHub Actions to generate automated reports (Loss curves, F1-score plots) as Pull Request comments for model version comparison.

N. Experienced in **monitoring ML models in production** to track accuracy, latency, throughput, and overall system health.

O. Skilled in setting up **real-time monitoring dashboards** using **Prometheus and Grafana** for both system and model metrics.

P. Implemented **data drift and concept drift detection** workflows to trigger retraining pipelines when performance dropped in production.

Q. Designed **alerting systems** for ML model degradation (accuracy drop, drift, latency) and integrated them with Slack/Email notifications for quick response.

R. Implemented **model versioning and experiment tracking** using **MLflow** and **DVC** to ensure reproducibility of ML workflows across teams.

S. Containerised ML models using **Docker** and deployed them on **Kubernetes** clusters, ensuring scalability, high availability, and environment consistency.

T. Collaborated with cross-functional teams (Data Science, DevOps, and Product teams) to deliver **end-to-end ML solutions**, reducing model deployment cycle time from weeks to days.

TECH-STACK:

Data & Model Versioning	Git, GitHub, DVC
Orchestration/ML Pipelines	Kubeflow Pipelines (KFP)
Experimental Tracking & Model Registry	MLflow
Model Serving	Kserve / Fast API
Deployment & Release	ArgoCD
CI/CD For Mlops	GitHub Actions, Jenkins
Cloud Platforms	AWS
Containerization	Docker
Container Orchestration	Kubernetes
Scripting Language	Python
Monitoring	Prometheus, And Grafana
Operating Systems	Windows, Linux/Unix , Mac

EDUCATION:

Name	Period	Domain
JNTUH College of Engineering, Hyderabad	June 2007 - June 2011	Computer Science Engineering (CSE)

PROFESSIONAL EXPERIENCE-1:

Company Name	Duration	Designation
GenY Media	July 2011 - Jan 2019	Senior Marketing Specialist

PROFESSIONAL EXPERIENCE-2:

Company Name	Duration	Designation
LARC SOFTWARE PVT LTD	Feb 2019 - Present	Senior MLOPS Engineer

Daimler (EV Battery Health Fault Classification):

Industry: Automotive | **Headquarters:** Germany
Role: MLOps Engineer | **Website:** **https://group.mercedes-benz.com/en/**

Project Description:
Daimler is a global leader in the automotive industry, with a focus on luxury cars, trucks, buses, and innovative solutions in electric and autonomous vehicles. The company is known for its brands, including Mercedes-Benz, Smart, and Freight-liner, and its significant role in advancing sustainable mobility.

Roles & Responsibilities

Deployed the **EV battery fault classification model using KServe**, enabling real-time prediction of battery health issues like over-voltage, thermal risk, and capacity degradation.

Built **Kubeflow Pipelines** to automate the full ML workflow — telemetry data ingestion, feature engineering, model training, validation, and production deployment.

Implemented **CI/CD using GitHub Actions** to automate code build, unit testing, Docker image creation, and deployment of model services to Kubernetes.

Integrated **Kubeflow Pipelines with KServe** so that every approved model version is automatically promoted from staging to production.

Set up **monitoring using Prometheus and Grafana** to track model latency, request volume, error rate, and system resource usage for battery health services.

Created **alerting rules** for critical issues like high prediction failure rate and increased response time to ensure quick incident handling.

Implemented **model versioning and rollback** using KServe revisions to safely deploy improved fault detection models without impacting live users.

Optimized **resource usage on Kubernetes** by tuning CPU and memory for training and inference pods, reducing infrastructure cost.

Ensured **secure deployments** by managing secrets, service accounts, and access control across Kubeflow and KServe environments.

Collaborated with data scientists and QA teams to **standardize MLOps practices**, improving release speed and production stability for EV analytics systems.

CrowdStrike:

Industry: Cybersecurity | **Headquarters:** Austin, Texas | **Role:** MLOps Engineer

Project Description:
CrowdStrike is a leading cloud-native cybersecurity company providing endpoint protection and threat intelligence through its flagship Falcon platform. The project focused on integrating and automating CrowdStrike solutions to enhance the deployment, security monitoring, and scalability of security infrastructure for enterprise systems.

Roles & Responsibilities

- Developed and automated end-to-end ML pipelines for cybersecurity analytics (threat detection, anomaly detection, malware classification) using Kubeflow Pipelines and MLflow.

- Implemented data and model versioning with DVC and MLflow Model Registry, enabling reproducibility and controlled model promotion across dev, staging, and production.

- Built scalable CI/CD pipelines using Jenkins and GitHub Actions to automate model training, testing, containerisation, and deployment.

- Designed and provisioned cloud-native ML infrastructure on AWS and Azure using Terraform and Ansible, optimising for security, scalability, and cost-efficiency.

- Containerised ML models with Docker and deployed them on Kubernetes (EKS/AKS) clusters for secure, high-availability inference.

- Integrated real-time monitoring with Prometheus and Grafana to track system performance, latency, and ML-specific metrics (accuracy, drift, false positives in threat detection).

- Automated data preprocessing pipelines for cybersecurity telemetry using Airflow/Kubeflow, ensuring clean and consistent data for training and inference.

- Applied DevSecOps practices in MLOps pipelines by integrating Trivy for container image scanning, enforcing RBAC policies, and securing model artifacts in cloud storage.

- Deployed and validated ML models using A/B testing and canary releases, ensuring secure and reliable rollouts without impacting enterprise systems.

- Collaborated with data scientists and security analysts to productionize ML models for the Falcon platform, improving detection accuracy and reducing response times for cyber threats.

Abbott Laboratories:
Industry: Healthcare, Pharmaceuticals, Diagnostics | **Headquarters:** Illinois, USA | **Role:** MLOps Engineer

Project Description:
Abbott Laboratories is a global healthcare company that operates in multiple sectors, including pharmaceuticals, medical devices, diagnostics, and nutrition. Abbott is known for creating innovative products that enhance health and wellness across the globe. The company serves patients, healthcare professionals, and customers in more than 160 countries, and its mission is to improve lives through the development of cutting-edge healthcare solutions.

Roles & Responsibilities

- Designed end-to-end ML pipelines for healthcare diagnostics (patient data analytics, medical image processing, lab automation) using Kubeflow Pipelines and MLflow.

- Implemented data versioning and model reproducibility with DVC and MLflow Model Registry, ensuring compliance with healthcare standards (HIPAA, FDA).

- Automated ML CI/CD pipelines using Jenkins and GitHub Actions, enabling faster and safer deployment of predictive healthcare models.

- Provisioned secure and scalable cloud-based ML infrastructure (AWS S3, SageMaker, Azure ML) using Terraform and Ansible, optimised for sensitive healthcare workloads.

- Containerised ML models with Docker and deployed them on Kubernetes clusters (EKS/AKS) to provide reliable and scalable diagnostic model services.

- Integrated monitoring systems with Prometheus and Grafana to track not only infrastructure KPIs but also healthcare-specific ML metrics (accuracy, false negatives, drift).

- Developed data preprocessing pipelines for electronic health records (EHRs) and IoT medical devices using Airflow/Kubeflow, ensuring data quality and consistency.

- Enforced DevSecOps practices in ML workflows with Trivy (container vulnerability scanning), role-based access control, and encryption for sensitive patient data.

- Implemented A/B testing and shadow deployments for ML models to validate diagnostic accuracy before release into production healthcare environments.

- Collaborated with data scientists, clinicians, and regulatory teams to productionize ML solutions, improving diagnostic accuracy and patient outcomes across global healthcare systems.

DECLARATION:

I hereby declare that the information furnished in this resume is true and correct to the best of my knowledge and belief. I take full responsibility for the accuracy of the details provided, and I understand that any misrepresentation may lead to disqualification from consideration.