


# RAAJESH LAGUDUVA RAMESHBABU


Experienced Data Scientist Transitioned to MLOps Engineer


Trying to make the world a better place, one line of code at a time.


 <https://www.linkedin.com/in/raajeshlr>

 ML Dev & MLOps - <https://github.com/raajeshlr?tab=repositories>

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 Mace Surabi, Chennai.

 Capgemini - 10 Years

 B.E ECE: 86.3 %

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## SKILLS

- LLMOps, GCP / AWS / Azure MLOps, Vertex AI, Sage Maker, Azure ML, Docker, Kubernetes, OpenShift, Airflow, Kubeflow, Jenkins, Databricks, Mlflow, Terraform, Cloud Formation, DVC, GitHub Actions.
- Machine Learning, Deep Learning, NLP, Python, RNN, LSTM, Keras, PyTorch, OpenCV, MongoDB, SQL.

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## MLOPS WORK EXPERIENCE

**On-premises MLOps** - <https://github.com/raajeshlr/Resume/blob/master/ArchitectureOpenshift.jpg>

- **E2E ML Pipeline:** Transformed DS team's notebooks into a robust ML pipeline, managing data loading, processing, training, and report management.
- **Agile Collaboration & Continuous Improvement:** Enforced software engineering best practices, overcoming DS team challenges and promoting continuous improvement.
- **Scalable Deployment:** Orchestrated Fast API-based scoring engine routers, Dockerized, and deployed on OpenShift for efficient production deployment.
- **Production Deployment & Environment Expertise:** Addressed production deployment issues, deploying across various environments using Jenkins and OpenShift clusters, ensuring smooth transitions and optimized performance.

**Azure MLOps** - <https://github.com/raajeshlr/Resume/blob/master/Architecture%20Image%20Azure.png>

- **Azure DevOps Pipeline and Infra Management:** Implemented Azure DevOps Pipeline & orchestrated resources such as storage accounts, Databricks workspaces, Kubernetes clusters, Airflow using Terraform.
- **Databricks for ML Pipeline Execution:** Utilized Databricks for ML Pipeline execution, facilitating seamless data operations with storage accounts.
- **Airflow Orchestration on Kubernetes:** Used Airflow on Kubernetes managing DAGs & execute Databricks Jobs, utilizing Kubernetes Pod Operator for running containerized images from Azure Container Registry.
- **End-to-End Azure DevOps Integration:** Integrated Azure DevOps with the project repository for automating Docker image creation, pushing to ACR, and uploading Airflow DAGs to storage account file shares.

**AWS MLOps** - <https://github.com/raajeshlr/Resume/blob/master/Architecture%20Image%20AWS.PNG>

- **CI/CD DevOps Pipeline with AWS Resources:** Utilized AWS Code Pipeline for ML model CI/CD, integrating S3, Code Commit, Code Build, and Amazon EKS. Implemented Docker containers for modular ML components.
- **ML Pipeline:** Implemented different steps of Machine Learning Pipelines through AWS Sage Maker.
- **Infra Automation:** Created the Infra through Cloud Formation and automated it using the bash scripts.
- **Deployment:** Deployed containers on Amazon EKS/ECS Clusters using Code Build and Kubernetes commands.
- **Cluster Management:** Experienced on creating Kubernetes Clusters, exposing, and scaling the pods.
- **Sustainability:** Used the code carbon package on the ML Pipeline to measure the CO2 Emissions and performed actionable recommendations to reduce it.

**GCP MLOps** - <https://github.com/raajeshlr/Resume/blob/master/Architecture%20Image%20GCP.PNG>

- **CI/CD DevOps Pipeline with GCP Resources:** Designed and executed CI/CD DevOps Pipeline for Machine Learning models, utilizing GCP Cloud Source Repository, Cloud Build for triggers, and Cloud Function.
- **Machine Learning Pipelines:** Used Kubeflow components and deployed it to GCP Vertex AI.

- **Scheduled Jobs:** Periodic jobs for running pipelines using Cloud-Scheduler, Cloud Pub/Sub, Cloud Function.
- **Infra Provisioning:** Created the Infrastructure through Terraform.
- **Sustainability:** Used the code carbon package on the ML Pipeline to measure the CO2 Emissions and performed actionable recommendations to reduce it.

#### MLflow

- **Machine Learning Pipelines with MLflow:** Created experiments and registered the best models.
- **Deployment and Monitoring:** Deployed models using both real-time inferencing and batch transform methods and developed a model monitoring system integrated with MLflow, utilizing DVC for version control and GitHub actions for automated Python testing.
- **Production ready ML Models:** Ensuring user authentication through Single Sign-On (SSO) Azure Active Directory. Installed SSL certificates on VMs for secure HTTPS transport and seamlessly integrated with various systems for ML pipelines spanning from data ingestion to model serving.

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### ML DEVELOPMENT WORK EXPERIENCE

#### Infosys Intelligent Assistant - To automate support projects.

- **Web App Development:** Used Angular (UI), Python on business layer, MongoDB on Data Layer.
- **Machine Learning Ticket Classification:** Pulled tickets history from ISTM and used Algorithms like Logistic Regression, Random Forests, Decision Trees, BERT for ticket category classification.
- **E2E Machine Learning Pipelines:** Implemented for both training and Inferencing.
- **Text Rank and KB Integration:** For related tickets search and providing automatic solutions from KB.

#### Infosys Fraud Detector

- **Text and Numerical Fraud Detection:** Have used LSTM + CNN based ensemble network for this.
- **Image Tampering Detection:** Using Deep Learning model + NLP techniques Spacy, tesseract, bounding box.
- **Deployment and Architecture:** Used Docker, Azure AD Single Sign On (SSO) with 3-tier architecture.

#### Infosys Intelligent Chatbot – Understands user screen and provides solution.

- **Implementation:** Developed Azure Chatbot using node.js and used Python for backend Machine Learning.
- **Advanced techniques:** Used One-Shot Learning, NLP techniques, and built with QnA and RPA Services.
- **Deployment with Docker on Azure:** Deployed Python code to Azure as a Docker Image.

#### Comprehensive cross check for new joiners

- **Document processing and Data comparison:** Developed Python Bots for extracting fields from documents and pdfs, comparing it with SAP DB data.
- **Deployment Pipeline setup:** Created Deployment pipelines of this project in the Virtual Machines.
- **HR Automation:** It's for the HR Team & product is live, it automated the manual efforts and reduced FTE's.

#### Signature classification using CNN.

- **Data Collection & Training:** Started project from scratch, collected images, labelled it, built with CNN model.
- **Script Development:** Written Python code for cropping, finding the coordinates and completed this project.

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### INTERNSHIP EXPERIENCE

 <https://theschoolof.ai/>

#### Extensive Vision for AI - CNN

- CNN Projects in Keras - [https://github.com/raajeshlr/CNN\\_KERAS\\_NLP\\_INTRO\\_EVA1\\_INTERNSHIP](https://github.com/raajeshlr/CNN_KERAS_NLP_INTRO_EVA1_INTERNSHIP)
- CNN Projects in PyTorch - [https://github.com/raajeshlr/CNN\\_PyTorch\\_EVA4B2\\_Internship](https://github.com/raajeshlr/CNN_PyTorch_EVA4B2_Internship)
- We worked on the concepts like Image Classification, Object Detection using YOLO v3, Transfer Learning, Super Convergence, Landmark's Detection.

## **Natural Language Processing - NLP**

- NLP Projects in PyTorch - <https://github.com/raajeshlr/NLP-END>
- We worked on the concepts like Text Classification, Sequence to Sequence translation using multi head attention models.

## **Extensive Machine Learning Operations MLOPS - EMLO**

- MLOps - <https://github.com/emlopsinfy?tab=repositories>
  - We worked on Docker Internals, Kubernetes Clusters, Heroku, CI/CD, Model Deployment on AWS EC2.
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## **Certificates**

- ML Nanodegree Udacity, Sequence Models - Coursera, Machine Learning - Coursera, Machine Learning A-Z Udemy, LLMOps Specialization.

## **Honor Awards**

- Value creator award from Capgemini
- Impact creator award from Infosys
- Best performer of the year award from TCS
- Service and commitment award from TCS.

## **Languages**

- Saurashtra, English, Tamil, RW Hindi, Learning Kannada.

## **Achievements**

- Secured 'Certificate A' Exam under authority of, Ministry of Defense, Government of India.
- Completed Hindi Exams until Praveshika.
- Presented Parallel Parking Robots and Image Processing surveillance system papers during college.

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