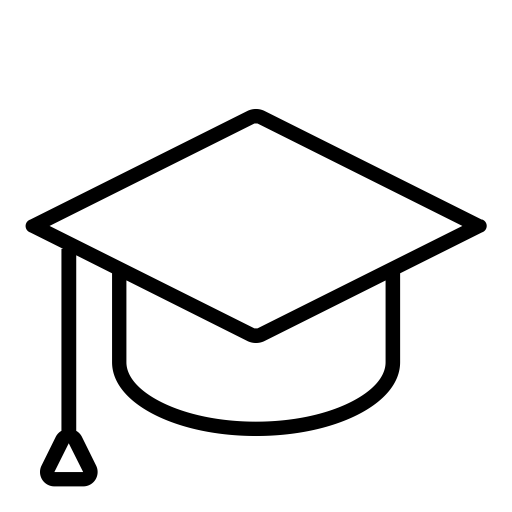
RAAJESH LAGUDUVA RAMESHBABU  raajeshlr2@gmail.com

Experienced Data Scientist Transitioned to MLOps Engineer  +91 - 9600745502

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

A picture containing text, clipart

Description automatically generated <https://www.linkedin.com/in/raajeshlr> Image result for work experience icon png Capgemini - 10 Years

 ML Dev & MLOps - <https://github.com/raajeshlr?tab=repositories>  B.E ECE: 86.3 %

# 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.

# MLOPS WORK EXPERIENCE

# Capgemini 16th Aug 2022 - Present

# 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.

**Accenture – 27th July 2021 to 09th August 2022**

# 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.

# ML DEVELOPMENT WORK EXPERIENCE Infosys 03rd Dec 2018 to 23rd July 2021

# 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.

# JUNIOR ML ENGINEER WORK EXPERIENCE TCS, 22nd Dec 2014 – 30th Nov 2018

# Home Credit Default Risk

* Our goal is to predict loan defaulters using Logistic Regression, Random Forest, and Light-GBM model.
* Performed EDA, preprocessing done, tried feature engineering, and evaluated with ROC AUC.

# Finding Donors for Charity

* Our goal is to predict individuals makes money > $50,000 to appeal donor for a non-profit organization.
* Performed EDA, pre-processing including skewed continuous feature transformation, normalization, encoding.
* Performed Grid Search CV and fine-tuned essential parameters for GBM, which achieved 87% test accuracy.

# Densely Connected Convolutional Networks - Dense-Net

* CIFAR10 Dataset: Dense-Net Paper <https://arxiv.org/pdf/1608.06993.pdf>
* Created Dense-Net architecture with three convolution blocks and two Transition blocks.
* Achieved the max validation accuracy of 88% after fine-tuning and implementing OneCycleLR.

# Creating Customer Segments

* Developed Unsupervised Learning, clustering technique, demonstrated feature scaling, dimensionality reduction and feature transformation using PCA, and identify customer segments hidden in the data.
* Developed K-Means clustering algorithm and GMM and measured performance with Silhouette score.

# Convolutional Neural Networks using Fashion MNIST Data - No Obsolete method.

* Goal is to achieve 99.2% Val Accuracy with less than 20,000 Hyper-parameters (No Hidden layers should be used.
* Developed the model with a high-level framework Keras, with selection of TensorFlow for backend.
* The model achieved 99.2% validation accuracy in 11 Epochs.

# Restaurant Review Management System

* Goal is to classify reviews, performed cleaning, stemming, created corpus and bag of words with 2000 features.
* Implemented Gaussian Naïve Bayes Classifier, and trained and tested the model, evaluated using f1 score.

# INTERNSHIP EXPERIENCE <https://theschoolof.ai/>

# Extensive Vision for AI - CNN

* CNN Projects in Keras - <https://github.com/raajeshlr/CNN_KERAS_NLP_INTRO_EVA1_INTERNSHIP>
* CNN Projects in PyTorch - <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.

# 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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