RAAJESH LAGUDUVA RAMESHBABU

Machine Learning Development and MLOps Engineer

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

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📍 Shivani Apartments, Bangalore.
💼 Accenture - 7 Years
🎓 B.E ECE: 86.3 %

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

⚙ ML Development - https://github.com/raajeshlr?tab=repositories

⚙ ML Operations: MLOps - https://github.com/emlopsinfy?tab=repositories

SKILLS

Machine Learning Development: Machine Learning, Deep Learning, NLP, Python, RNN, LSTM, TensorFlow, Keras, PyTorch, Image Processing, OpenCV, MongoDB, SQL.

Machine Learning Operations MLOps: DVC, GitHub Actions for CI/CD, Continuous Machine Learning, Heroku, Docker, Kubernetes, GCP Cloud Services, Microsoft Azure Services, Azure ML Studio, MLflow, Kubeflow, Model Monitoring.

Leadership Skills.

INTERESTS: Machine Learning Operations

MLOPS INTERNSHIP EXPERIENCE   @ 📍 https://theschoolof.ai/ **Sep 2021 – Present**

- Version Control using DVC and automated Python testing using GitHub Actions.
- Developed Flask App which accepts image and returns prediction, then deployed it to Heroku – https://emlopsinfy.herokuapp.com/
- Developed Flask/PyTorch/Docker App and deployed it to Heroku using Docker – https://pytorchinfy.herokuapp.com/
- Learnt fully about Docker components, also created two services and communicated using docker-compose.
- Learnt all the internals of Kubernetes, used online environment and worked on topics like create K8s cluster, deploy app, explore app, scale up the app, and much more.
- Worked Kubernetes on local, created MongoDB and MongoDB-express services and interconnected with secrets and config maps.
- Installed Kubeflow from Ubuntu Terminal using K3s and WSL2 on Windows OS and deployed ML pipeline created using Kubeflow components.

GitHub Repo for ML Operations MLOps - https://github.com/emlopsinfy?tab=repositories

MLOPS WORK EXPERIENCE   **Accenture, August 2021 – Present**

Model Monitoring

- Developed Model Monitoring System using Evidently for the data drift, target drift, performance drift.
- Created the pipeline on MLflow for experiment tracking and model registry and integrated with Model Monitoring System.

Model Deployment to GCP

- Implemented CI/CD Pipelines for ML models.
- Created Pipelines using Kubeflow components and deployed it to GCP Vertex AI.
- Used Cloud services such as Cloud Function, Cloud Build, Cloud Source Repo, Cloud Scheduler, Cloud Pub/Sub, Cloud Storage, Vertex AI.
- Experienced in creating production-ready models and have taken care of user Authentication by SSO Azure AD, installed SSL certificates on VM for secure https transport, integrated with different systems for ML Pipelines starting from the data ingestion part till the model serving part, created docker containerized 3 tier architecture: Angular for front-end, Python for Business Layer, MongoDB for Data Layer.

ML DEVELOPMENT WORK EXPERIENCE   **Infosys Ltd, Dec 2018 – July 2021**

INFOSYS FRAUD DETECTOR

- Developed web application - Angular: UI Layer, Python: Application Layer, MongoDB: Data Layer.
  - Worked on **Python and MongoDB** and have understandable knowledge on Angular.

- Have used **LSTM + CNN** based ensemble network for identifying fraudulent info in text and numerical data.
- **Deep Learning model + NLP techniques** Spacy, tesseract, bounding box for identifying tampered image.
- Used **Docker** for Python, implemented **Azure AD Single Sign On (SSO), 3-tier architecture.**

The product is live, and taken care of end to end - Requirement, technically leading, deployment.

COMPREHENSIVE CROSS CHECK FOR NEW JOINERS

- Developed **Python bots** for extracting fields from documents and pdfs, comparing it with SAP DB data.
- Created deployment pipelines of this project in the Virtual machines.

It is for the HR Team and the product is live, it automated the manual cross check work and reduced FTE's.

INFOSYS INTELLIGENT CHATBOT - Understands user screen and provides solution.

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

INFOSYS INTELLIGENT ASSISTANT - To Automate Support Projects.

- Used **Logistic Regression, Random Forest, Decision trees algorithm** for the text classification.
- Implemented **LDA for clustering for tickets, spacy for NER, text rank for related tickets.**

SIGNATURE CLASSIFICATION USING CNN

- Started this project from scratch, collected the images, labelled it, trained using CNN model.
- Written the python code for cropping, finding the coordinates and completed this small project.

ML DEVELOPMENT INTERNSHIP EXPERIENCE ⊙ https://theschoolof.ai/

⊡ Experience on CNNs and NLP using Keras and PyTorch, GAN.

CNN - Image classification and object detection, Landmark's detection, Transfer Learning, super convergence.

NLP - RNN's and LSTM for text classification, Sequence to Sequence models.

CNN Projects in Keras: https://github.com/raajeshlr/EVARepository

NLP Projects in PyTorch: https://github.com/raajeshlr/NLP-END

JUNIOR ML ENGINEER WORK EXPERIENCE   TCS, Dec 2014 - Nov 2018
HOME CREDIT DEFAULT RISK

- Our goal is to predict loan defaulters using Logistic Regression, Random Forest, and LightGBM 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 a prediction accuracy of 87%.

DENSELY CONNECTED CONVOLUTIONAL NETWORKS - DENSENET
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 identity 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 OBSELTE 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.

CERTIFICATES

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

HONOR AWARDS

Impact creator award from Infosys.
Best Performer of the year award from TCS.
Service and commitment award from TCS.

LANGUAGES: Sourashtra, 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.