Basil K Jose

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SUMMARY

- 2+ years of experience as a Data Science/Machine Learning Engineer.
- Proficient in programming languages such as Python and SQL.
- Strong background in statistical modeling, data analysis, machine learning and deep learning techniques.
- Proficient in data visualization, data cleaning, preprocessing, and feature selection.
- Experience with machine learning libraries like ScikitLearn, TensorFlow, Keras, NLTK, and OpenCV.
- Deep understanding of image processing algorithms.
- Proficient in using computer vision problems like image classification, segmentation, and object detection.
- Strong problem-solving skills and ability to work independently or in a team.

EDUCATION

BTech **Computer Science and Engineering,** **Cochin University (CUSAT)** 2015-2019

EXPERIENCE

Machine Learning Engineer **OptiSol Business Solutions**, Chennai Dec 2021 - Present

- Worked on various Computer Vision use-cases, such as Power Pole Maintenance and Infant Diaper-size prediction.
- Worked on Backend APIs for object detection/segmentation training and inference pipelines, created Micro-services using Flask APIs.
- Developed object detectors using TensorFlow and PyTorch Object detection (YOLO and MM Detection), optimized the models and integrated them into Flask APIs.
- Worked on advanced python file handling for data preparation, such as working with JSON and XML files.
- Collaborated with cross-functional teams to understand business requirements and implement solutions.

Data Scientist **Apes AI** , Kochi Jan 2021 - Dec 2021

- Worked on detecting fire, smoke, and personal protective equipment using yolov5 models.
- Worked on Exploratory Data Analysis (EDA), preprocessing, and predictive modeling.
- Worked on using feature engineering techniques to create new features.
- Collecting open-source data available and filtering data based on problem statements.
- Developed a model to detect Not Safe For Work (NSFW) images, blur and blank images, utilizing some existing solutions.

SKILLS

- **Programming Languages** : Python, SQL
- **Data science** : Machine Learning, Deep Learning, Computer Vision, NLP
  Tensorflow, Keras, PyTorch, Pandas, NumPy, Scikit-learn, OpenCV
  Matplotlib, Plotly, Seaborn
- **Tools** : Git, Jupyter Notebook, Visual Studio

PROJECTS

Automated Utility and Power Pole Maintenance

Technology: Python, RESTful APIs (Flask), MySQL, TensorFlow, Keras, PyTorch and OpenCV

- Developed a computer vision platform for image segmentation and detection, including instance, semantic, YOLO and MM Detection.
- Engineered a logic to measure power pole violations using the output of segmentation models.
- Calculate visual distance measurements capabilities like getting the pole height using pixels, finding the distance between one object to another, measuring the distance between the top and bottom wire etc.,

Fire, Smoke and PPE Detection - Alarm System

Technology: Python, Flask, Object detection model(yolov5), Data Annotator and OpenCV

- Developed a model to detect if an employee is wearing Personal Protective Equipment (PPE) in the work zone. The PPE model was trained using data on fire and smoke.
- Developed a flask API app to detect PPE, smoke, and fire from live CCTV footage.

Cotton Disease Prediction

Technology: Python, TensorFlow, Keras, Flask, Inception_v3

- Trained a model to detect diseased cotton leaves and plants.
- Using transfer learning, employed the Inception model to predict whether images of the leaves/plants belonged to the diseased or healthy category.

Insurance Lead Prediction

Technology: Python, SckitLearn, Random Forest, XGBoost

- Cross-sell health insurance to the existing customers who may or may not hold insurance policies with the company.
- A machine learning model needs to predict whether or not a customer will purchase a policy.

Personal Character Analysis Using NLP From Twitter Data

Technology: Python, Twint, Gensim, TextBlob

- Scraped user tweets using Twint based on various filters.
- Preprocessed the scraped data for unsupervised learning using gensim.

CERTIFICATIONS

- Applied AI course
- Python for Data Science and Machine Learning Bootcamp - Udemy
- SQL For Data Science - Udacity
- Version Control with Git - Coursera
- Introduction to Machine Learning in Production - Coursera

PUBLICATIONS (Blogs)

- Twint: Twitter Scraping Without Using Twitter's API
- Time Series Forecasting using LSTM
- Natural Language Preprocessing: Steps for Text Data Preprocessing
- Reducing Commercial Aviation Fatalities