LOKESH IPPILI

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Objective

Experienced AI engineer with over 4 years in developing and deploying advanced models from field-collected data. Proven expertise in deep learning, computer vision, and real-time deployment. Seeking to contribute effectively to a dynamic team at a progressive organization by leveraging skills in building robust AI solutions and optimizing real-world applications.

Professional Experience

Machine Learning Engineer
ATAI Labs Private Limited, Hyderabad | Dec 2021 - Present
KNOW YOUR CONTAINER LOCATION (KYCL) :

The primary objective of this project is to track the container location in the container yard deployed and gone for LIVE in the India's biggest dry port Inland Container Depot, Tughlakabad located in Delhi which is the flagship terminal of CONCOR (Container Corporation of India).

- Used Deep learning algorithms like YOLOv4, EAST and ResNET for capturing the container number and achieved 99% accuracy.

YOLOv4 (You Only Look Once): Achieved 99% of accuracy by producing the State-of-the-Art results in Container Number detection.

EAST (Efficient and Scene Text Detection): Used for segmenting the container number characters. It is capable of predicting the characters at arbitrary orientations.

ResNET(Residual Networks): It enhances the extraction of information. Utilized for multiple tasks like characters classification and container number orientation classification.

- Key Achievement was generated the AI models, Implemented python inference, alert system and in time delivery in the project milestones from POC(Proof of Concept) to the deployment stages.

KCC QUERY ASSISTANT:

It is a Local First AI application that allows farmers to query about the agricultural advice from the Kisan Call Center where farmers can call toll-free numbers to get the expert advice on the agricultural issue in their local language which covers the crop management, pest control, weather, soil health etc

Agentic ETL:

An Agentic ETL system powered by LLMs and Orchestration frameworks. Each step in the Traditional ETL pipeline becomes an autonomous agent that analysts can interact with using prompts. The system intelligently reasons over tasks, validates outcomes to complete the full ETL flow.

Hands-on Projects

1. **Image Caption Generation** : Intersection of Computer Vision and Natural Language Processing.
2. **Cricket Score Prediction**: Linear Regression and Random Forest Regression
3. **Real-Time Alert Generation:** Used Pre-trained Object detection model for over crowd detection

Academic Projects

DESIGN AND DEVELOPMENT OF AUTOMATED HAIRSTYLE MACHINE(SHM)

This project involves the prototype of a hairstyle machine with proper hardware and software setup. We cast-off **Variational Autoencoder, Artificial Intelligence for 3D images** for generating different types of suitable hairstyles based on the User head scanned by the machine. 3D-Printing technology is used for proper functioning of hardware to perform the hairstyle in all directions

Technical Skills

AI & ML: Convolutional Neural Networks(CNN), Deep Learning, Computer Vision, NLP, Regression, Classification, Supervised Machine Learning, Data Processing & Hyperparameter tuning techniques.

Programming : Python(Numpy, Pandas, TensorFlow, Pytorch), Exploratory Data Analysis(EDA), OpenCV(Image Processing), FastAPI, Ray distributed application, Interfacing IOT devices.

Natural Language Processing: Named Entity Recognition(NER), TF-IDF, Text Classification, Word2Vec, Transformers, Text classification, LSTM, Sentence Transformer, Large Language Model (LLM).

GenAI: Ollama Tool, Langchain, LangGraph, Vector Databases, Retrieval-Augmented Generation (RAG), Agentic AI, Multi-Agent Systems, Swarm Agents, Few Shot Prompting.

Data Visualization & Data Analysis : Matplotlib, Seaborn, SQL database, MongoDB.

Model Deployment: Edge Devices(Intel NUC), Docker, AWS Sagemaker, Gitlab, CI/CD, Streamlit.

Professional Skills:

Expertise in Computer Vision: Developed algorithms for object detection, Image Classification and real-time video analytics. Had a strong background in deep learning frameworks such as TensorFlow and PyTorch, along with proficiency in OpenCV for image and video processing.

Proficiency in NLP: Generated text classification models using various classification techniques using Gensim and Spacy for text processing and worked on different neural networks like variants of RNNs.

Adeptness in Python Programming: I had done few python courses in various platforms like NPTEL, HACKERRANK and had knowledge in Multiprocessing & Multithreading, had hands-on experience on ML libraries.

Data Processing & Training: My skills extend to collecting, preprocessing large datasets necessary for training, testing, and validating ML models. I prioritize ensuring data integrity and model performance.

Education:

Bachelor of Technology (B.Tech) in Electronics and Communication Engineering

V R Siddhartha Engineering College, Vijayawada | 2017 – 2021

Intermediate (MPC)

Narayana Junior College, Vijayawada | 2015-2017

SSC (Secondary School Certificate)

Sri Srinivasa High School, Vijayawada | 2014-2015