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Manirajan K

AI Engineer

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SUMMARY

AI Engineer with 2 years of experience in **computer vision and deep learning**, specializing in YOLO-based detection, segmentation, and edge deployments on Jetson devices. Strong background in **Python, OpenCV, and Linux systems**, with hands-on **project deployments in multiple client sites across India**. Holds a Master's in **Data Analytics**, with additional experience in **statistical modeling and data-driven analysis**.

EXPERIENCE

AI Engineer **August 2023 — Present**
Quantic Tech Analysis Private Limited Chennai

- Designed and optimized deep learning models for object detection, classification, and segmentation, meeting diverse client specifications.
- Built modular computer vision pipelines in Python integrating pre-processing, inference, and post-processing for both edge and server-side deployments.
- Deployed and supported solutions on **Jetson Nano/Xavier devices** and Linux-based environments, ensuring smooth field operations.
- Configured industrial cameras and optimized imaging setups for challenging factory and plant conditions.
- Conducted **project deployments across India**, collaborating with **10+ clients on-site** for installation, calibration, and troubleshooting.
- Partnered with QA teams to run extensive testing, validation, and performance tuning for robust real-world applications.
- Maintained detailed documentation of architectures, model benchmarks, and deployment configurations while collaborating closely with cross-functional teams through code reviews and sprint planning.

Application Engineer - Intern **March 2023 — August 2023**
Mew Technology Bangalore

- Led the development and implementation of a comprehensive AI project, leveraging **Deep Learning** algorithms for **multi- camera face capture** and automated reporting to management.
- Designed and developed a user-friendly **Desktop Application** resembling a paint tool, featuring diverse drawing options and photo integration for image file creation.
- **Integrated multiple sensors**, including ultrasonic, temperature, IR, RFID, accelerometer, camera, and microphone, **for data acquisition** across various formats.
- **Developed an engaging AI workshop curriculum** covering fundamental to advanced concepts, with hands-on exercises and interactive examples to ensure effective learning and enjoyment.
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PROJECTS

Binary Image Classification **Aug 2023 — Sep2023**

- Developed a Convolutional Neural Network (CNN) model using TensorFlow and Keras for binary image classification (cat vs. dog), achieving a notable accuracy of 70%.
- Implemented image augmentation techniques and Dropout to address overfitting, resulting in an improved accuracy of 83%.
- Utilized Transfer Learning with MobileNet v2 from TensorFlow Hub to enhance model accuracy, achieving an outstanding accuracy of 97%.
- Successfully saved and loaded the trained model as an HDF5 file, enabling seamless prediction and continued training.

Smart Attendance System using Face Recognition Techniques **Nov 2022 — Jan2023**

- Developed a Smart Attendance System application leveraging face recognition technology.
- Collected user images via camera, processed, and detected faces using OpenCV's Caffe model.
- Employed the Support Vector Machine (SVM) classification algorithm for face recognition training.
- Recognized faces in real-time through live camera feeds to record attendance.
- Recorded attendance with detailed information (person's name, time, etc.) in a CSV file

EDUCATION

- Master of Science in Data Analytics, Bharathiar University – Coimbatore 2021-2023
- Bachelor of Science in Statistics, Arignar Anna Govt.Arts College – Villupuram 2018-2021

SKILLS

Programming Languages: Python, SQL, R, Git, Shell Scripting, Google Sheets, Tableau

Deep Learning & ML: PyTorch, TensorFlow, Keras, Scikit-Learn, CNNs, Object Detection, Segmentation, Model Optimization, Statistical Modeling

Computer Vision: OpenCV, YOLO, Object Tracking, Image Classification, Data Augmentation, Dlib, MediaPipe

Data Analytics : Data Cleaning & Wrangling, EDA, Feature Engineering, Predictive Analytics, Statistical Tests, Data Visualization (Matplotlib, Seaborn, Pandas)

Deployment & Edge AI: Jetson Nano/Xavier, NVIDIA DeepStream SDK, Docker, Linux Environments, Real-time Inference Pipelines

Hardware & Integrations: Industrial Camera Configuration, Sensor Integration (Arduino, IoT), Imaging Setup Optimization

Collaboration & QA: Documentation, Code Reviews, Test Case Design, On-site Client Deployment & Troubleshooting

COMPETITIONS

Participated in Smart India Hackathon 2022 **Jan 2022 — Jun 2022**

submitted ideation for the problem stated by Ministry of Ports, Shipping & Waterways - AK1137 Air Quality Index for Major Ports

- Creating a Hardware using multiple sensor with MQTT internet communication protocol for monitoring air quality.
- Data on the air quality in the 12 Major port will be collected through hardware (VAAYU). Kept on the dashboard to assess the extent of measures taken to keep the air quality index within the normal level.
- The monitoring Air Qualities will be automatically stored in the cloud storage as data for the prediction using ML Algorithm

CERTIFICATIONS

- Data Base Management System - NPTEL
- Intro to TensorFlow for Deep Learning - Udacity