AKHIL NADH PC

Machine Learning Engineer

~5 YRS

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KEY SKILLS

- ➤ Python Programming
- ➤ Deep Learning
- ➤ Computer Vision
- ➤ Machine Learning
- ➤ Natural Language Processing
- ➤ Problem Solving
- ➤ Researcher
- ➤ Automotive Domain Knowledge

SKILL SET

Data Science

Feature Engineering, Exploratory Data Analysis, Data Visualization.

Machine Learning Model
SVM, Linear Regression, Random Forest, Decision Tree, KMeans

Deep Learning Model
ANN, CNN, RNN, LSTM, YOLO, Transfer Learning, Sequential

Programming Languages

Python, SQL, Shell Scripting

MLOps Tools

ML Flow, Apache Airflow

Databases

MySQL, MongoDB, PostgreSQL

Web Frameworks

Django REST, Flask, Postman

Deployment

AWS, Heroku, Docker

Blockchain

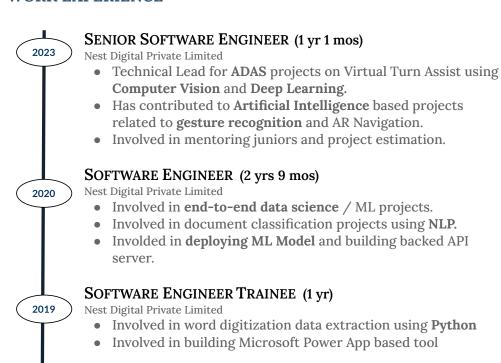NFT, Smart Contract, IBM Blockchain

FAMILIAR LIBRARIES

Pandas, Numpy, Matplotlib, Keras Tensorflow, OpenCV, NLTK, SpaCy, Scikit-Learn, Word2Vec, Asyncio, Django SQLAlchemy, Beautiful Soup, OpenAI, ROS

OVERVIEW

A passionate machine learning engineer having nearly 5 years of experience in computer vision and artificial intelligence. I've worked in the automotive domain solving challenging problems and building end to end machine learning projects related to gesture navigation, drowsiness detection, vehicle collision warning, surface projection HMI, AR Navigation, failed component prediction etc. Seeking a challenging position where my knowledge, talent, hard work, dedication and sincerity can create a significant value

WORK EXPERIENCE

2023

SENIOR SOFTWARE ENGINEER (1 yr 1 mos)
Nest Digital Private Limited
- Technical Lead for **ADAS** projects on Virtual Turn Assist using **Computer Vision** and **Deep Learning**.
- Has contributed to **Artificial Intelligence** based projects related to **gesture recognition** and AR Navigation.
- Involved in mentoring juniors and project estimation.

2020

SOFTWARE ENGINEER (2 yrs 9 mos)
Nest Digital Private Limited
- Involved in **end-to-end data science** / ML projects.
- Involved in document classification projects using **NLP**.
- Involded in **deploying ML Model** and building backed API server.

2019

SOFTWARE ENGINEER TRAINEE (1 yr)
Nest Digital Private Limited
- Involved in word digitization data extraction using **Python**
- Involved in building Microsoft Power App based tool

EDUCATION

- 🎓 **M.TECH**, **Computer Science and Information Security (2017-2019)**
  National Insititute Of Technology, Jalandhar (NIT-J) CGPA 7.5
- 🎓 **B.TECH**, **Computer Science and Engineering (2011-2015)**
  College Of Engineering College, Chengannur, CUSAT, 72 %
- 🎓 **12th**, **Computer Science (2009-2011)**
  Don Bosco HSS, Iirinjalakuda, Kerala State Board, 91%

TECHNICAL KNOWLEDGE

Python	★★★★☆	Machine Learning	★★★☆☆	Deep Learning	★★★☆☆
Algorithm	★★★☆☆	Data Structure	★★★☆☆	Database	★★☆☆☆
Networks	★★★☆☆	Docker	★☆☆☆☆	Cloud	★☆☆☆☆

PROJECTS

Gesture Detection and Surface Projection HMI

Surface projection HMI employs a Human Machine Interface and identifies hand movement based on the camera image. It uses deep learning to detect different dynamic gestures, and it may be set up to recognize commands that control features in an automobile.

Role	Developer
Tech Stack	Python, OpenCV, Mediapipe, Deep learning, LSTM, Docker
Contribution	• Development of gesture Deep Learning model using LSTM and Sequential tensorflow model • Performance optimization • Building communication handler

Drowsiness Detection

The application uses computer vision to detect if the driver is drowsy and sends alerts to wake the driver. It also detects static hand pose switches screen and control features in automobiles such as music, HVAC control etc.

Role	Developer
Tech Stack	Python, OpenCV, Mediapipe, Jetson Nano, Unity
Contribution	• Development of drowsiness detection algorithm • UI development using OpenCV • Integration of pose detection

Sensor Fusion for Virtual Turn Assist

Using radar and camera fusion techniques, this machine learning-based POC can detect, recognize, and classify surrounding vehicles and persons in real time and estimate the likelihood of a collision depending on variables like distance, steering angle, velocity, and shows the indication of the same in GUI

Role	Developer
Tech Stack	Python, YOLOv5, Docker, Unity
Contribution	• Led the project with a team size of 6 members • Contributed to YOLOv5 Transfer learning • Contributed to reading multiple sensor information concurrently in real time. • Involved in designing code base architecting solution and performance-tuning activities

Issue Prediction Tool

The application receives text input from the user using API, uses natural language processing to evaluate the context and makes predictions about the system, discipline, and components that are most likely to sustain damage. Custom machine-learning models have been developed using the dataset provided to predict the same using traditional ML techniques.

Document Data Digitization and Classification

Word documents are parsed and digitized by the application. Additionally, it contains an NLP-based search engine that can locate and extract data from documents into a pre-defined template. The word file is parsed using the word-to-text tool, and the extracted information is preprocessed using different NLP algorithms before being saved into a MongoDB database. Word vectors are created from information, and a vector space model is constructed. When a search query is entered, it is also transformed to vector space, and documents with similarity scores that are close are retrieved. The application also uses NER models to identify relevant information from the sentences.