CHIRAG PATEL

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Summary

M.Tech AI/ML candidate at IIITDM Jabalpur with hands-on experience in Deep Learning, Cloud Computing, and NLP. Developed and deployed end-to-end ML solutions, including traffic forecasting (ConvLSTM), sentiment analysis (AWS), and real-time object detection (YOLOv8). Proficient in Python, Flask, and ML/NLP frameworks with a strong focus on solving real-world problems.

Skills

C++, Python, C programmer, SQL, Computer networks, Cloud Computing

Projects

Multi-Lane Short-Term Traffic Forecasting using CNN-LSTM (Colab, PyTorch)

IIITDMJ, M.Tech AI/ML Project

- Designed and implemented a deep learning pipeline for multi-lane traffic flow prediction using a hybrid CNN-LSTM architecture in PyTorch.
- Processed real-time traffic data across 43 sensor nodes with sequence length of 12 and forecast horizon of 6 future time steps.
- Employed 2D convolution layers followed by LSTM with a fully connected layer for final prediction.
- Achieved significant performance improvements over epochs:
- Final Test MAE: 8.95 Final Test MAPE: 0.71 Final Test RMSE: 12.40
- Used custom masked MAE loss to handle zero/missing values and StandardScaler for input normalization.
- Trained model with: Batch size: 64 ,Epochs: 25
- Optimizer: Adam with learning rate decay and gradient clipping
- Number of trainable parameters:127,188

Car Detection using YOLOv8 and Roboflow | M.Tech Thesis

Python, YOLOv8, Roboflow, OpenCV, Google Colab

- Trained a YOLOv8 model on a custom car dataset via Roboflow, achieving 88.3% mAP@0.5.
- Implemented custom evaluation with confusion matrix and visual metrics plotting.
- Automated batch inference, result logging in CSV, and visual outputs including annotated images and a contact sheet.

Education

IIITDM JABALPUR | Jabalpur, M.P.
Artificial intelligence and Machine Learning | 07/2026

- Currently pursuing M.Tech. degree in Artifical intelligence And Machine Learning (CPI 7.5(First semester))
- Designed a Convolutional LSTM model for multi-lane short-term traffic forecasting, combining CNN for spatial feature extraction and LSTM for temporal sequence modeling.

Madhav institute of Technology and Science | Gwalior ,M.P.
Mechanical Engineering, CPI(7.48) | 05/2023

- Attended and participated in "Automatic Path finder and hurdle avoider Robot" (IETE club).
- Successfully completed an internship in SolidWorks with GD&T software, gaining proficiency in advanced modeling techniques and geometric dimensioning and tolerating (GD&T) standards.

Linkedin

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