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Tushar Garg

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I am pursuing a Master's degree at IIT Hyderabad and had done a research internship with the Mercedes Benz R&D India. I am interested in projects and research related to Machine learning/Deep Learning/ Computer Vision and also lead the AI/Ml student team of the TiHAN project (funded by the Department of Science and Technology) at IIT Hyderabad.

Education

Master in Computer Science and Engineering, *IIT H* 2020-2022
CGPA: 9.0/10.0
Bachelor in Computer Science and Engineering, *Inderprastha Engineering College* 2014-2018
Percentage: 68.72/100
XIIth, CBSE, *Delhi Jain Public School* 2013-2014
Percentage: 83.8/100
Xth, CBSE,*Kennedy Public School* 2011-2012
CGPA: 8.6/10

Skills

Tools and Languages	Python,C, C++, Linux, MySQL.
Framework and Libraries	Pytorch, Scikit-learn, Numpy, Pandas, Matplotlib, Seaborn.
Quantitative Research	Machine Learning, Deep Learning, Artificial Intelligence (AI), Computer Vision.
Relevant Subjects	Data structures, Algorithms, DBMS, OS.

Technical Experience

AI/ML Research Intern / Lane Marking Detection for ADAS **SEPT 2021 — Present**
Mercedes Benz R&D *India*

- Design and Implement deep learning architectures for lane marking detection.
- Compared the results produced by the designed architecture with the existing architectures.
- Submitted the work in the 12th International Conference on Pattern Recognition Systems (ICPRS).

Position of Responsibility

Lead the AI/ML student team for Technology Innovation Hub on Autonomous Navigation and Data Acquisition Systems (TIHAN) project at IIT H (funded by the Department of Science and Technology Govt. of INDIA).

Projects

SIGNBOARD TRANSLATION FROM VERNACULAR LANGUAGES
(AI4Bharat project, One-Fourth Labs)

- In this project, we translate the language that is present on the signboard for the person who is unknown to that language.
- The project is divided into three minor subprojects:
  1. Text region detection: Create a bounding box around the text in the image.
  2. Recognition of individual characters: Crop the bounding box and recognize the individual characters in the text.
  3. Natural Language Processing for translation: Convert the text from one language to other languages of choice character-wise.

BACKGROUND OBJECT DETECTION IN SPEECH DATA
(collaboration with University of Agder, Norway)

- Convert the speech data into image data (Spectrograms).
- Compared the performance of different CNN architectures on the Spectrogram dataset.
- Submitted the work in IEEE Transaction on Visualization and Computer graphics.

CLOUD-BASED SOIL MOISTURE DETECTION SYSTEM
IIT HYDERABAD, Telangana

- Worked on an MQTT-based web application, using raspberry pi as a cloud server.
- Soil moisture data get transferred between server and clients.
- Users (connected to the IITH network) can control the water motor through their smartphones.

Steering Angle Prediction for Autonomous Vehicles

- Creates dataset having a front camera view of the car and corresponding steering angles.
- Train the model on the dataset and drive the car in a virtual environment based on the predicted steering angles.