DEEP LEARNING APPROACH FOR TRAFFIC SYSTEM

B P Khot T[1],S S Ittannavar T[2],R H Havaldar T[3]

Department of Electronic and Communication, Hirsugar Institute of Technology

*Nidasoshi, Karnataka **590001***

Pratimak1128@gmail.com

Abstract

The Amount of accidents which occur due to over speeding and non-compliance to the traffic signs and rules are increasing day by day. The people hardly follow any speed zone sign limits which are placed on the road by the traffic control authorities. The over speeding in the speed restricted zones results in accidents and loss of lives. The drink and drive conditions are also increasing day by day. This project deals with the innovative concept of deep learning-based approach for automatic enforcement of traffic rules. The proposed project consists of a collecting data set of different road signs and speed restricted zones and training a deep neural network using transfer learning to detect or predict different road signs and traffic zones using the image or video input fed to the trained model using the camera. The hardware prototype of the vehicle is developed in this project in the form of remote-controlled car which consists of raspberry pi with camera. When the car is moving the camera captures the video feed and keeps a track of different speed zones using the trained deep learning model running on the raspberry pi. If the person driving the car is found to be violating the speed zones the system developed will warn the user first and on consistent violation the proposed system will get the car registration details and automatically charge a penalty corresponding to the zone violated. The email will be sent to the RTO authorities along with the registration and penalty details and SMS acknowledgment will be sent to registered owner of the car. Thus, proposed system provides with a smart solution to force the drivers to compulsory follow the speed zones voluntary or penalize them automatically using deep learning if violated. The proposed project concept also consists of detection of alcohol intoxication levels and bar the vehicle ignition if the driver is found to be intoxicated above the permitted limits to further avoid accidents due to drink and drive.

Book of abstracts of ICACCAD 2022 "International Conference on Advances in Communication and Computing using Artificial Intelligence & Data Science", 15th& 16st September 2022

13