

## TRAFFIC SIGN RECOGNITION

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### ABSTRACT

This project is a system which will help drivers in recognizing traffic sign. Traffic sign detection and recognition is all about a system which is dedicated to car drivers. Traffic sign detection and recognition is a project that is used for detection and recognition of traffic signs which is present on the road side and displays those signs on monitor/screen fixed inside driver's car. This invention provides a vehicle-borne system and method for traffic sign recognition that provides greater accuracy and efficiency. Traffic sign recognition is all about a system which is dedicated to help drivers by providing a facility to see the traffic signs on their dashboard more accurately.

**KEYWORDS:** Traffic Sign Recognition, Tensor Flow, Object detection, Convolution Neural Networks, Open CV.

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### I. INTRODUCTION

This project is a system which will help drivers in recognizing traffic sign. Traffic sign detection and recognition is all about a system which is dedicated to car drivers. Traffic sign detection and recognition is a project that is used for detection and recognition of traffic signs which is present on the road side and displays those signs on monitor/ screen fixed inside driver's car.

We have chosen this topic because focus on roads is a major aspect of safe driving. While driving a car if driver look away during the course of driving its focus got distracted from roads and this might result in road accidents. In this Project we are removing driver's effort to look out for traffic signs situated alongside road. We are trying to provide them a screen or monitor inside their car which display all traffic signs located alongside roads.

We are providing a system to car drivers which help them to recognize all the traffic signs that come along in their route and according to those traffic drivers can maintain their focus on roads and prevents accidents and with the help of those sign they can ensure safe driving.

### II. METHODOLOGY

This project is a system which will help drivers in recognizing traffic sign. In this Project we are removing driver's effort to look out for traffic signs situated alongside road. We are trying to provide them a screen or monitor inside their car which display all traffic signs located alongside roads.

We have mounted camera for capturing images on rear view mirror of car with the help of which traffic signs located on the roadside can be captured. After capturing the sign, it will detect the sign and image processing is performed by Open CV and it will reshape and resize the image. Then, it will try to match the captured image from existing Data set. We have used Convolution Neural Network for image Recognition. And we have used Keras package to build CNN model. After recognition of image it will show the recognized sign on the LCD dashboard of your car with the name of sign.

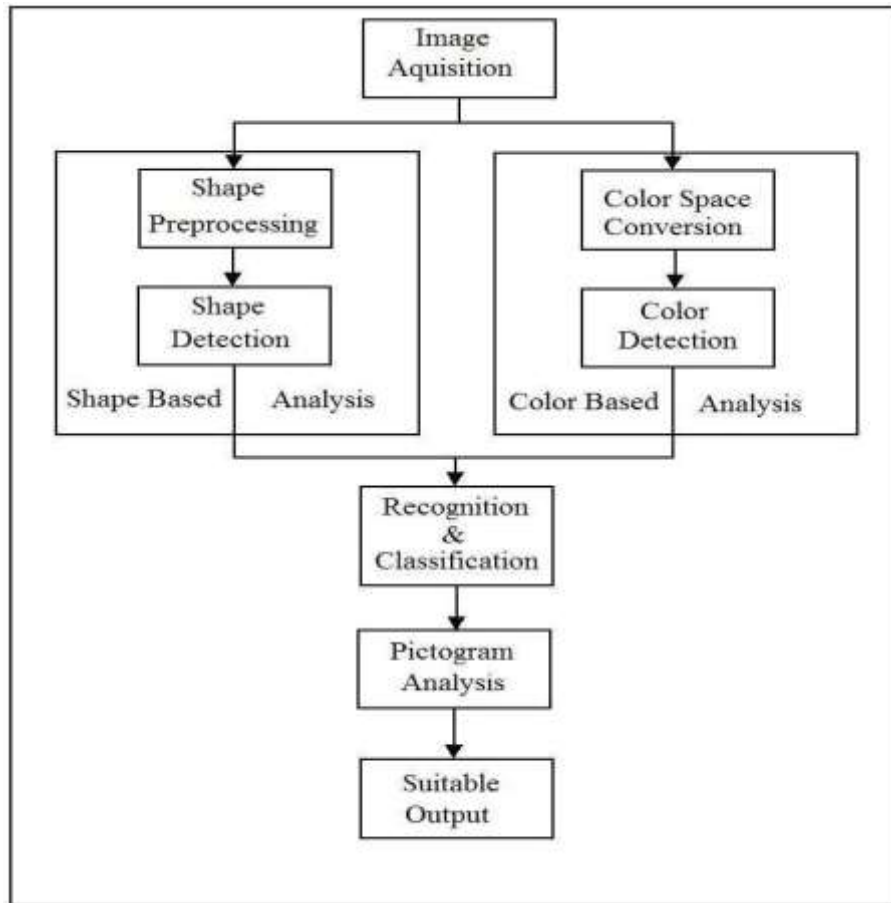


Fig-1

### III. RESULT

Traffic Sign Recognition provides a vehicle-borne system and method for traffic sign recognition that provides greater accuracy and efficiency. Traffic sign recognition is all about a system which is dedicated to help drivers by providing a facility to see the traffic signs on their dashboard more accurately. The project uses German Traffic Sign Recognition Benchmark (GTSRB) to train our own custom traffic sign classifier. Here, Deep learning is used to train the machine for particular set of objects so that a system can be implemented for the info of traffic signs by detecting and then recognizing them in real-time.



Fig-2



Fig-3



Fig-4



Fig-5

#### IV. PROPOSED SOLUTION

The proposal is to deploy a system in car which can identify various traffic signs like speed control sign, right turn sign and left turn sign etc. through camera fitted in rear view mirror of car and perform appropriate operations like detection and recognition of traffic signs in real-time and save the information of that object in the database at that very moment. It can also show the information of that recognized sign on car's LCD dashboard and classify them if it is speed sign or a turn sign etc. and store that information in the database. It can give alert notification for the driver.

#### V. CONCLUSION

The aim of the project that is to recognize, detect the traffic signs on road and save their details in the database is successfully and accurately done by this project with the use of concepts like Deep learning, Convolutional Neural Networks, OpenCV, Keras and Tensor Flow. Traffic Sign Recognition not only show traffic sign on screen but also speak up Name of traffic sign so that user can concentrate on road rather than looking for here and there for Traffic signs. The work done manually can now be completely replaced by this system and it can reduce all the extra efforts and reduce the number of accidents.

#### FUTURE SCOPE

In future SNS service will be integrated in this project for alert notification when signs are detected. Currently, the bounding box technique is used which is bounding the targeted object within a rectangle. In future, Segmentation will be used. In future the model would be trained for recognizing more number of signs.

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