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Awareness and Detection of the Gridlock Manifestation for Vehicles Voice Alert using CNN

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ABSTRACT

To ensure a smooth and secure flow of traffic, road signs are essential. A major cause of road accidents is negligence in viewing the Traffic signboards. The proposed system helps in recognizing the traffic sign and sending a voice alert through the speaker to the driver so that he or she may take necessary decisions. The
proposed system is trained using a convolutional neural network (CNN) which helps in traffic sign image recognition and classification. Following the detection of the sign by the system, a voice alert is sent through the speaker which notifies the driver and also contains a section where the vehicle driver is alerted about the traffic signs. The aim of this system is to ensure the safety of the vehicle's driver and passengers.

Keywords: convolutional neural network (CNN), deep learning, traffic signs.

I. INRODUCTION

Deep Literacy accepts computational models that are collected of multiple processing layers to learn donations of data in numerous situations of abstraction .Those styles have dramatically upgraded the state of the art in speech discovery, visual object discovery, object reorganization and numerous other disciplines such as medicine and genomics.

When someone neglects to observe business signs while driving, they are putting their life as well the lives of other motorists, their passengers and those on the road at risk. Hence, we came up with this system.

II. METHODS AND MATERIALS

The test process is initiated by developing a comprehensive plan to test the general functionality and special features of a variety of platform combinations. Strict quality control procedures are used. The process verifies that the operation meets the conditions specified in the system conditions document and is bug free. The following are the considerations used to develop the framework for developing the testing methodologies.

in which business signs are automatically detected using the live videotape sluice and are read out audibly to the motorist who may also take the needed decision. Another area of focus in our system is the idea of getting the position of the stoner using GPS. Also, all the business Signs will be stored in a database along with their position so that the motorist will be notified in advance regarding the approaching business.

Unit Testing:

Unit testing involves the design of test cases that validate that the internal program sense is performing properly, and that program input produce valid labor. This is a structural test that relies on knowledge of its construction and is invasive. Unit tests perform introductory tests at the element position and test a specific business process, operation, and/or system configuration.

Functional Test

Functional tests give methodical demonstrations that functions tested are available as specified by the business and specialized conditions, system attestation and stoner primers.

Functional testing is centered on the following items:

Valid input: linked classes of valid input must be accepted.

Invalid input: linked classes of invalid input must be rejected.

Functions: linked functions must be exercised.

Output: linked classes of operation labor must be exercised.

Systems/Procedures: uniting system or procedures must be invoked.

System Test:

System testing ensures that the entire integrated software system meets conditions. It tests a configuration to ensure known and predictable results. System testing is grounded on process descriptions

Literature Survey:

Title: Automatic Signboard Detection System by the Vehicles.

Author: Anusree A. S., Kumar, H., Iram, I., and Divyam, K.

Year: 2019

Description:

A major cause of accidents is not considering the signboards on roads and not following the rules accordingly. So, to avoid this problem, introduce a signboard detection system in the vehicle which will detect the signboard and warn the driver about it. It display the alert message or information on provided LCD and voice alert through speakers. Traffic sign recognition is important to transport system on the highway or road. Major approach is to detect road sign and extract it using OpenCV. The system will play an important role in saving many lives.

and overflow, emphasizing process driven links and integration points.

Integration Testing:

Software integration testing is the incremental integration testing of two or further intertwined software factors on a single platform to produce failures caused by interface blights. The task of the integration tests is to check that factors or software operations. Factors in a software system or one step up software operations at the company position,interact without error.

Build the test plan:

Any design can be divided into units that can be further processed for detailed processing as well. A testing strategy for each of these unit is carried out. Unit testing helps to identity the possible bugs in the individual element, so the element that has bugs can be linked and can be remedied from crimes.

Title: A smart driver alert system for vehicle traffic using image detection and recognition technique.

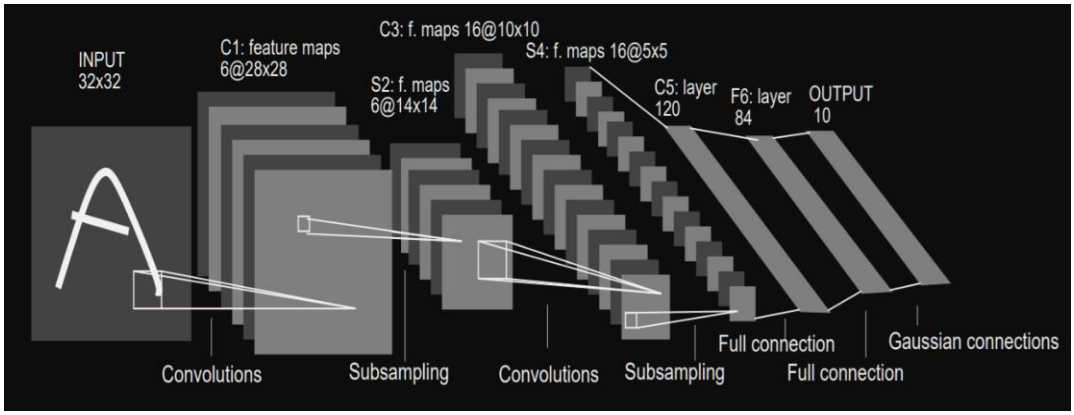
Author: S. Harini, V. Abhiram, R. Hegde, B. D. D. Samarth, S. A. Shreyas and K. H. Gowranga.

Year: 2019

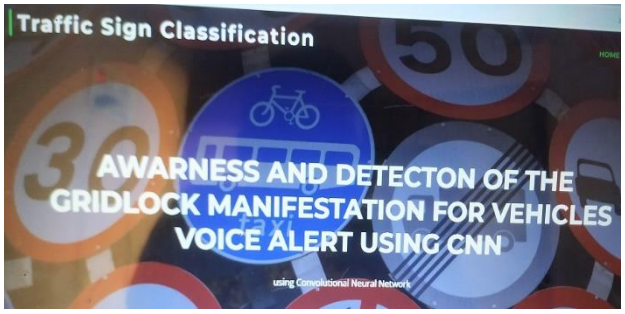
Description:

Road signs are important to ensure smooth traffic flow without accidents or mishaps. Road symbols are pictorial representations having different necessary information required to be understood by driver. Road signs in front of the vehicle are ignored by the drivers and this can lead to catastrophic accidents. This Paper presents an overview of traffic sign board detection and recognition and implements a procedure to extract the road sign from a complex natural image, processes it, and alert the driver using voice command.

III. System Architecture:



IV. Figures and Tables



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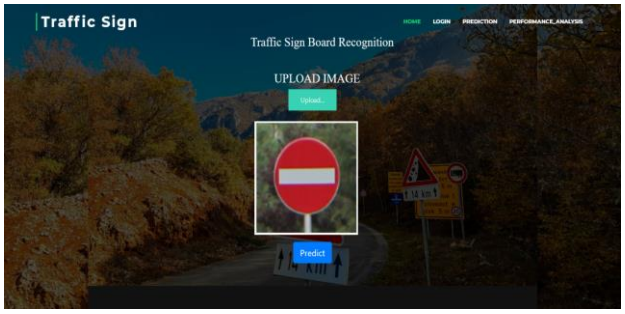

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IV. CONCLUSION

The business subscriber board discovery and voice alert system are enforced using convolutional neural network. Colorful models under the CNN heading were studied, and the bone with loftiest delicacy on the GTSRB dataset was enforced. The creation of different classes for each business sign has helped in add to the delicacy of the model. A voice Communication is transferred after recognition of the sign which cautions the motorist, therefore helping him to form applicable opinions. This paper is a significant advancement in the field of driving, as it would ease the job of the motorist without compromising on the safety aspect. Also, this system can easily be enforced without the need of important tackle, therefore adding its reach.

V. REFERENCES

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