

TRAFFIC SIGN DETECTION USING IMAGE PROCESSING

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ABSTRACT

Traffic sign recognition is used to maintain traffic signs, warns the distracted driver, and prevent his/her actions that can lead an accident. A real-time automatic sign detection and recognition can help the driver, significantly increasing his/her safety. Traffic sign recognition also gets an immense interest lately by large scale companies such as Google, Apple and Volkswagen etc. driven by the market needs for intelligent applications such as autonomous driving, driver assistance systems (ADAS), mobile mapping, Mobil eye, Apple, etc. and datasets such as Belgian, German mobile mapping. Hence, we are proposing this project to do the same with cost efficient manner using Node MCU. We are proposing automated real time system which will capture traffic sign and indicate it at driver dashboard with front obstacle exact distance on monitor. Camera is used to capture images of traffic signs and is connected to NODE MCU. Monitor is used to display required output, showing type of sign.

Keywords: Traffic Signs Analysis, Detections.

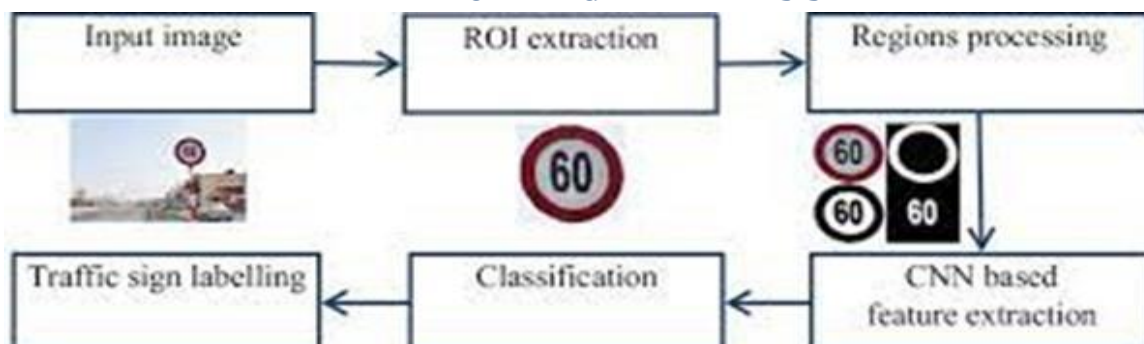
I. INTRODUCTION

According to the world accident report, India has highest number of road accidents. Road accidents have earned India a dubious distinction. With over 130,000 deaths annually, the country has overtaken China and now has the worst road traffic accident rate worldwide. As many as 1,39,091 people lost their lives in 4,40,042 road accidents in the country last year. The statistics released by the National Crime Records Bureau (NCRB) 1,18,533 of the victims were male. They include 11,571 pedestrians. The 28 States together accounted for 1,36,771 deaths and the seven Union Territories for the remaining. Tamil Nadu tops the list of with 16,175 deaths in 67,757 accidents, followed by Uttar Pradesh with 15,109 deaths in 24,478 accidents. Andhra Pradesh is third with 14,966 deaths in 39,344 accidents and Maharashtra fourth with 13,936 deaths in 45,247 accidents. The Capital city of Delhi accounts for about 1,866 deaths in 6,937 accidents. The states in India like Tamil Nadu, Uttar Pradesh and Andhra Pradesh accounted annually for 15.4%, 10.3% and 10.1% of the road accidents in the country.

II. METHODOLOGY

1. Input Image: Image is captured through camera
2. ROI: Region of Interest of image is cropped to be used for detection of traffic sign.
3. Processing: The ROI is processed for recognition of Signboard.
4. Feature Extraction: Features are extracted to be compared with existing signs.
5. Classification: The image is classified and labelled with help of CNN Yolo
6. Traffic Sign Recognition: The traffic sign is recognized and alert is sent to driver.

III. MODELING AND ANALYSIS



IV. RESULTS AND DISCUSSION

Advantages

- Proposed system will detect the sign board and alert the driver with respective alert but if driver has neglected the Sign board
- On the other hand, system will continuously track front vehicle distance using ultrasonic sensor, and breaks will be applied according to distance.

Applications

- Self driving Car
- Research.

V. CONCLUSION

Proposed system will detect the sign board and Alert the driver with respective alert but if driver has neglected the Sign board alert the automated braking will be activated by Raspberry Pi. On the other hand, system will continuously track front vehicle distance using ultrasonic sensor, and breaks will be applied according to distance.

VI. REFERENCES

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