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**Introduction**

In today’s evolving world of technology, traffic sign classification is one of the hottest topics in computer vision. This is due to its applications in driverless cars, road safety and advanced driver assistance systems. Traffic sign classification involves recognising various sign images on the road and grouping them according to their respective classes. In a report by GOV.UK (2020), there were about 14266 reported vehicle accidents in 2018. Due to an increase in the number of road accidents daily, various governmental bodies have attempted to reduce this by introducing traffic lights, traffic signs, speed bumps, and round-abouts.

A lot of significant research has been carried out to solve the problem of traffic sign recognition. (problems of TSR). The latest technology in cars is the advanced driver assistance systems (ADAS) which supports drivers by automatically detecting traffic signs, recognising speed limits, detecting lane lines with the help of sensors and cameras installed in the car (Swathi and Suresh, 2017).

Improving the accuracy of both

the detection and classification of traffic sign would increase the effectiveness of current

systems, and potentially play an important role in the development of future auto-pilot

computer systems.

This study aims at detecting and classifying traffic signs using machine learning (ML) algorithms. For this to be accomplished, the following research questions have been developed: (a) Which datasets are used for traffic sign detection and classification? (b) Which ML algorithms have been used for traffic sign detection and classification?

(a) Which datasets are used for traffic sign detection and classification?

There are various datasets used for traffic sign detection. These are German traffic sign recognition benchmark (GTSRB) dataset (Stallkamp, et al., 2012), German traffic sign detection benchmark (GTSDB) dataset (Houben, et al., 2013), and Belgium traffic sign dataset (BTSD) (Mathias, et al., 2013).

(b) Which ML algorithms have been used for traffic sign detection and classification?

Several ML algorithms have been identified by researchers for detecting and classifying traffic signs. However, before this, computer vision techniques were used for this purpose. Computer vision is an interdisciplinary field of computer science, robotics, and artificial intelligence (Ramprasath, Anand, and Hariharan, 2018). Its goal to enable computers to interpret images or videos. Swathi and Suresh (2017) identified three methods for detecting traffic signs based on colour, shape, and learning. Colour based detection works by removing irrelevant objects in the background utilising colour segmentation. Shape detection extracts the image contours and identifies edges in the image. Learning-based combines both the shape and colour detection methods. Other techniques involving ML algorithms for detection and classification are Support Vector Machines (SVMs), Artificial Neural Network (ANN), and Convolutional Neural Network (CNN) (Shustanov and Yakimov, 2017; Swathi and Suresh, 2017; Zhang, et al., 2019).

**References**

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