DIGITAL TRAFFIC SIGN BOARD

INTRODUCTION:

Traffic sign have come a long way since the first automobile was invented. They have long served the purpose of warning and guidance drivers and also enforcing the traffic laws governing speed, parking, turns, and stopping. In this study, the authors discuss the issues and challenges facing current traffic signs. And how it will evolve into a next-generation traffic sign architecture using advanced wireless communications technologies. With technological advances in the areas wireless communication and embedded electronics and software, we are focused that, in the future, digital traffic sign posts will be capable of transmitting the traffic sign information wirelessly to road users, and this will transform our roads into intelligent roads, where sign will appears promptly and automatically on in-vehicle displays to alert the driver. There is no longer the need to watch out for traffic signs since the detection will be automatic and performed wirelessly. This transformation will lesson burden on the srivers, so that they can then focus more on the traffic ahead while driving. Also, this evolution into wireless digital sign posts will fit well with the vision of future smart cities, where smart transportation technologies will be present to transform how we drive and commute, yielding greater safety, ease and assistance to drivers.

LITERATURE REVIEW:

[1] This proposed method uses detection and identification method on account of the image processing ,which is combined with convolutional neural network (CNN) to sort traffic signs. On account of its high recognition rate, CNN can be used to realize various computer vision tasks. TensorFlow is used to implement CNN. Able to identify the circular symbol with more than 98.2% accuracy.

ADVANTAGES: This method has Hough Transform is used to detect and pre-process the road traffic signs before recognized, which greatly helps to improve the accuracy and timeliness.

DISADVANTAGES: This method is used to convert certain sign board with the shape only, and the main drawback of this method , it cannot convert sign board like when road is on construction . It can only convert into shape only.

[2] Real time traffic sign detection and recognition on FPGA, it is one of the most important parts of the Advanced Driver Assistance System. For improved safety of ride they used real time traffic detection system on ML507 Evaluation Board.

ADVANTAGE: This system is a real time traffic detection system by recognizing the traffic sign and it is also reliable.

DISADVANTAGE: System only able to detect the direction sign board in the road and then convert those directional sign board into shape only.

[3] Automatic traffic sign detection and recognition using SetU-Net and a modified Tversky Loss Function with LI-Constrain.

ADVANTAGES: Traffic sign detection as an image segmentation problem and propose a deep convolutional neural network-based approach to solve it. To this end, we propose a new network, the SegU-Net, which we form by merging the state-of-the-art segmentation architectures–SegNet and U-Net to detect traffic signs from video sequences. For training the network, use the Tversky loss function constrained by an L1 term instead of the intersection over union loss traditionally used to train segmentation networks. Separate network, inspired by the VGG-16 architecture, to classify the detected signs. The networks are trained on the challenge free sequences of the CURE-TSD dataset. The proposed network outperforms the state-of-the-art object detection as the Faster R-CNN inception Resnet V2 and R-FCN Resnet 101,by a large margin and obtains a precision and recall of 94.60%and 80.21%, respectively, which is the current state of this part of the dataset. In addition, the network is tested. On the German Traffic Sign Detection Benchmark (GTSDB)dataset, where it achieves a precision and recall of 95.29% and89.01%, respectively. This is on a par with the performance of the aforementioned object detection networks. These results prove the generalizability of the proposed architecture and its suitability for robust traffic sign detection in autonomous vehicles .Index Terms— Traffic sign detection, traffic sign recognition, convolutional neural network, Tversky index, L1 constraint Traffic signs recognition with deep learning

DISADVANTAGES: The network is tested on the German Traffic Sign Detection Benchmark (GTSDB) dataset, where it achieves a precision and recall of 95.29% and 89.01%, respectively. The accuracy may changes and didn't remains constant and proposed method with this accuracy only.

[4] Traffic Signs recognition with deep learning with artificial neural network ,convolutional neural network, multilayer perceptron ,deep learning, artificial intelligence signs, autonomous vehicles.

ADVANTAGES: The presented method uses a modified LeNet-5 network to extract a deep representation of traffic signs To perform the recognition. It is constituted of a Convolutional Neural Network (CNN) modified by connecting the output of all Convolutional layers to the Multilayer Perceptron (MLP). The Training is conducted using the German Traffic Sign Dataset and Achieves good results on recognizing traffic signs..

DISADVANTAGES: In this proposed method , traffic sign recognition with proper way only that recognition of image only not digital in way.

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