Traffic Sign Recognition System Using Convolutional Neural NetworkDevineni

Authors : Devineni Vijay Bhaskar, Yendluri Raja

Abstract : We recommend a model for traffic sign detection stranded on Convolutional Neural Networks (CNN). We first renovate the unique image into the gray scale image through with support vector machines, then use convolutional neural networks with fixed and learnable layers for revealing and understanding. The permanent layer can reduction the amount of attention areas to notice and crop the limits very close to the boundaries of traffic signs. The learnable coverings can rise the accuracy of detection significantly. Besides, we use bootstrap procedures to progress the accuracy and avoid overfitting problem. In the German Traffic Sign Detection Benchmark, we obtained modest results, with an area under the precision-recall curve (AUC) of 99.49% in the group "Risk", and an AUC of 96.62% in the group "Obligatory".

Keywords : convolutional neural network, support vector machine, detection, traffic signs, bootstrap procedures, precision-recall curve

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