Abstract

Traffic Sign Recognition (TSR) framework is a significant part of Intelligent Transport System (ITS) as traffic signs help the drivers to drive all the more securely and proficiently. This paper speaks to another approach for TSR framework where location of traffic sign is done utilizing fuzzy rules based shading division strategy and recognition is refined utilizing Speeded Up Robust Features (SURF) descriptor, prepared by artificial neural network (ANN) classifier. In the identification step, the locale of intrigue (sign region) is divided utilizing an arrangement of fuzzy rules relying upon the tint and immersion estimations of every pixel in the HSV shading space, present prepared on channel undesirable area. At long last the recognition of the traffic sign is executed utilizing ANN classifier upon the preparation of SURF features descriptor. The proposed framework mimicked on disconnected street scene pictures caught under various brightening conditions. The discovery calculation demonstrates a high robustness and the recognition rate is very palatable. The execution of the ANN display is delineated as far as cross entropy, confusion matrix and receiver operating characteristic (ROC) curves. Likewise, exhibitions of some classifier, for example, Support Vector Machine (SVM), Decision Trees,
Ensembles Learners (Adaboost) and K Nearest Neighbor (KNN) classifier are surveyed with ANN approach. The recreation comes about represent that recognition utilizing ANN demonstrate is higher than classifiers expressed previously.

References

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Index Terms

Computer Science Fuzzy Systems

Keywords

Traffic Sign Recognition; Fuzzy Rules; Speeded Up Robust Feature; Artificial Neural Network; Confusion matrix; Receiver Operating characteristic Curve, Cross Entropy.