Improving Road Signs Detection performance by Combining the Features of Hough Transform and Texture

Abstract

With the large uses of the intelligent systems in different domains, and in order to increase the drivers and pedestrians' safety, the road and traffic sign recognition system has been a challenging issue and an important task for many years. But studies, done in this field of detection and recognition of traffic signs in an image, which are interested in the Arab context, are still insufficient. Detection of the road signs present in the scene is the one of the main stages of the traffic sign detection and recognition. In this paper, an efficient solution to enhance road signs detection, including Arabic context, performance based on color segmentation, Randomized Hough Transform and the combination of Zernike moments and Haralick features has been made. Segmentation stage is useful to determine the Region of Interest (ROI) in the image. The Randomized Hough Transform (RHT) is used to detect the...
circular and octagonal shapes. This stage is improved by the extraction of the Haralick features and Zernike moments. Furthermore, we use it as input of a classifier based on SVM. Experimental results show that the proposed approach allows us to perform the measurement's precision.

References

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Index Terms

Computer Science Pattern Recognition

Keywords
Road Sign Detection; Color Segmentation; Randomized Hough Transform; Haralick features; Zernike Moments; SVM classifier