CIRCULAR TRAFFIC SIGN CLASSIFICATION USING HOG-BASED RING PARTITIONED MATCHING

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Abstract- This paper presents a technique to classify the circular traffic sign based-on HOG (histogram of oriented gradients) and a ring partitioned matching. The method divides an image into several ring areas, and calculates the HOG feature on each ring area. In the matching process, the weight is assigned to each ring for calculating the distance of HOG feature between tested image and reference image. The experimental results show that the proposed algorithm achieves a high classification rate of 97.8%, without the need of many prepared sample images. The results also show that the best values of the number of orientation bins and the cell size of the HOG parameters are 5 and 10 x 10 pixels respectively.

Index terms*:* HOG, traffic sign classification, ring partitioned, template matching.