

Day/Night Detector for Vehicle Tracking in Traffic Monitoring Systems

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Abstract : Recently, traffic monitoring has attracted the attention of computer vision researchers. Many algorithms have been developed to detect and track moving vehicles. In fact, vehicle tracking in daytime and in nighttime cannot be approached with the same techniques, due to the extreme different illumination conditions. Consequently, traffic-monitoring systems are in need of having a component to differentiate between daytime and nighttime scenes. In this paper, a HSV-based day/night detector is proposed for traffic monitoring scenes. The detector employs the hue-histogram and the value-histogram on the top half of the image frame. Experimental results show that the extraction of the brightness features along with the color features within the top region of the image is effective for classifying traffic scenes. In addition, the detector achieves high precision and recall rates along with it is feasible for real time applications.

Keywords : day/night detector, daytime/nighttime classification, image classification, vehicle tracking, traffic monitoring

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