Real-Time Lane Marking Detection Using Weighted Filter

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Abstract : Nowadays, advanced driver assistance systems (ADAS) have become popular, since they enable safe driving. Lane detection is a vital step for ADAS. The performance of the lane detection process is critical to obtain a high accuracy lane departure warning system (LDWS). Challenging factors such as road cracks, erosion of lane markings, weather conditions might affect the performance of a lane detection system. In this paper, 1-D weighted filter based on row filtering to detect lane marking is proposed. 2-D input image is filtered by 1-D weighted filter considering four-pixel values located symmetrically around the center of candidate pixel. Performance evaluation is carried out by two metrics which are true positive rate (TPR) and false positive rate (FPR). Experimental results demonstrate that the proposed approach provides better lane marking detection accuracy compared to the previous methods while providing real-time processing performance.

Keywords : lane marking filter, lane detection, ADAS, LDWS
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