

Stereo Camera Based Speed-Hump Detection Process for Real Time Driving Assistance System in the Daytime

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Abstract : This paper presents an effective speed hump detection process at the day-time. we focus only on round types of speed humps in the day-time dynamic road environment. The proposed speed hump detection scheme consists mainly of two process as stereo matching and speed hump detection process. Our proposed process focuses to speed hump detection process. Speed hump detection process consist of noise reduction step, data fusion step, and speed hump detection step. The proposed system is tested on Intel Core CPU with 2.80 GHz and 4 GB RAM tested in the urban road environments. The frame rate of test videos is 30 frames per second and the size of each frame of grabbed image sequences is 1280 pixels by 670 pixels. Using object-marked sequences acquired with an on-vehicle camera, we recorded speed humps and non-speed humps samples. Result of the tests, our proposed method can be applied in real-time systems by computation time is 13 ms. For instance; our proposed method reaches 96.1 %.

Keywords : data fusion, round types speed hump, speed hump detection, surface filter

Conference Title : ICCIS 2014 : International Conference on Computational Intelligence Systems

Conference Location : Bali, Indonesia

Conference Dates : October 09-10, 2014