Traffic Density Analysis using Image Processing

International Journal of Computer Applications
Foundation of Computer Science (FCS), NY, USA

Volume 180

Number 42

Year of Publication: 2018

Authors:
Ashwini R. Patekar, Jaya H. Dewan, Samiksha A. Umredkar, Shruti S. Mohrir

10.5120/ijca2018917102

Abstract

Real time traffic density prediction and analysis have recently gained popularity as compared to traditional traffic density system using CCTVs. The popularity and need of traffic monitoring at public places, industrial sector, and residential areas have supported the widespread use of real time traffic monitoring. The motion of the vehicle is one of the basic parameter for identification of the flow of traffic on roads. The traffic flow on the roads can be basically categorized into heavy, medium and low traffic. Majorly thresholds that are used to correctly classify the traffic in any frame. Background subtraction, edge detection, optical flow estimation, BLOB( Binary Large Object) detection, magnetic loops, computer vision filtration techniques, closure operation are some techniques that are combined by various researchers and used to correctly classify the nature of vehicular traffic in a frame. However, the vehicular movement's nature is dynamic and unpredictable. For traditional techniques that are been used over years have a few challenges including the color of the road and obstacles such as shadow and illumination. The colors of majority of vehicles observed on roads are white, silver, and black. The roads also are cement
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based or tar-based those make them an obstacle in traditional systems. This paper presents a new blend of various studied techniques for Traffic Density Analysis.

References


Index Terms

Computer Science  Image Processing

Keywords

Vehicular traffic, binary large object, intelligent traffic system, Background Subtraction