Abstract

Vehicle speed estimation is very important dimension for observing speed limitation law and observing traffic conditions within city. This document aims to present a new approach for finding speed of vehicle by using Centroid method technique. In this study, the captured traffic images are collected from a stationary camera mounted on a freeway or at the junctions. These images are used for calculating speed for a particular vehicle by calculating Centroid value of vehicle. Using Centroid value, distance traveled by vehicle is calculated. After finding distance covered by vehicle in specific time duration, speed of vehicle is calculated. This approach is implemented in MATLAB by using image processing functions. Estimating speed of vehicle in traffic surveillance helps in preventing accidental cases, congestion control at junction and maintaining traffic discipline within city.

References

- A G Rad, A Dehghani and M R Karim, "Vehicle speed detection in video image
- N Kassem, A. E. Kosba and M Youssef, RF-Based Vehicle Detection and Speed Estimation; IEEE 75th conference on Vehicular Technology, pp 1-5
- V. K. Madasu and M. Hanmandlu, Estimation of vehicle speed by motion tracking on image sequences; Intelligent Vehicles Symposium, 2010 IEEE, pp 185 – 190
- S. Barnwal, R Barnwal, R Hegde and R Sing, Doppler based speed estimation of vehicles using passive sensor; IEEE international conference on Multimedia and expo workshops, 2013, pp 1-4

Index Terms

Computer Science
Applied Sciences

Keywords
Vehicle speed estimation  Centroid Method  MATLAB  Congestion  Traffic