Vehicle Identification and Tracking using Images Sequence

L.G.C Wimalaratna, D.U.J. Sonnadara
Department of physics, University of Colombo, Sri Lanka

ABSTRACT

The real time measurement and analysis of various traffic parameters such as speed and number of vehicles are increasingly required in traffic control and management. Image processing techniques are now considered as an attractive and flexible method for automatic analysis and data collections in traffic engineering. Various algorithms based on image processing techniques have been applied to detect multiple vehicles and track them.

In this paper, a method for moving vehicle identification and tracking is presented using consecutive digitized image sequence. The algorithm preprocesses consecutive images using gray scale and median filters. To extract vehicles from a traffic scene, difference between three consecutive images were taken and input to an edge detection filter that uses Sobel edge detection operator. Blob counting technique was applied to estimate the position and size of the moving vehicles in the image. To estimate the trajectory and count the individual vehicles, predicted area technique was applied to the blobs. The result of this work can be extended to classify vehicles and estimate speeds of individual vehicles from an input video source.