

Abstract

One use of computer vision is to help the process of observation of the vehicle. In this research, the authors wanted to take advantage of computer vision in creating a system that can help identify the status of the traffic density at certain toll roads. Input required by the system is a video, and output issued by the system in is an information about the status of the traffic density and the number of vehicles detected.

Optical flow is a method of observing the movement of each pixel of a digital image using the brightness value of every pixel. One use of optical flow is to help the process of segmenting a digital image. The segmentation process is one important process that must be done so that the system can identify the status of the traffic density. By applying the method of optical flow on the system, the detection accuracy of the number of vehicles obtained is 98.41%. While the accuracy of the density status generated by the system when compared with the target density status issued by the traffic police is 60%. Meanwhile, when tested against the density level that refers to the KM 14 of 2006, obtained accuracy conformity of density level is 90%.

Keyword : *computer vision, optical flow, vehicle detection, segmentation, highway traffic density.*