ABSTRACT

Vehicle users in residential area sometimes not paying attention to security and environmental safety by driving at a very high speed. This action can endanger residential citizens who are active in the environment such as children who are playing, people who are passing in the street, and other vehicle users. So far, sanctions and precautions against violators are difficult because there is no evidence of violation and no system can prevent such violations.

In this final project, the author will utilize technique of image processing to detect vehicle speed in residential area by using web camera. With this web camera, the system can detect vehicle speed based on a sequence of video frames using a single camera. This speed calculation uses frame difference method. This method works by comparing the frame between images to obtain information that determines whether or not a movement exists. From the information, can be obtained the speed of a vehicle that passes in residential area trajectory.

Based on the results of testing on this final task, the camera is placed on the pole with a height of ± 5.5 meters and adjust the camera angle position with an angle of 60°. Vehicle speed calculation results on the system has a standard deviation of 2.82 km / hour and uncertainty ± 1 km / hour. While the value of MSE produced is 12,632. When multiple vehicle objects are close together at less than 1 meter in the same frame, the system will calibrate the vehicle in the same ROI area resulting in the same speed.

Keyword: vehicle speed detection, frame difference, video processing