

ABSTRACT

In 2018, Indonesia was ranked as the 3rd country with the highest number of traffic accidents worldwide. One of the factors causing traffic accidents is traffic violations committed by motorists that ignoring traffic regulations, especially on the regulations of crossing prohibited lane markings. Therefore, a system that can monitor traffic flow intensively is needed to make it easier for the authorized state apparatus to make better traffic policies in the future. This reasearch uses CCTV video recording data to detect lane markings violations based of image processing.

system processing using image processing software. The image processing process by detecting lane markings uses Canny edge detection method. In addition, the process comparing of test results to the edge detection methods of Prewitt, Roberts and Sobel was also carried out. The Hough transform method is used to make straight line plotting above the lane markings that have been detected as markers in the area used as test material. The system will detect alerts for violations of road markings if the pixel value of the road markings on the video image is less than the pixel value of the background image. The system will detect for violations of lane markings if the pixel's value of the road markings on the video image is less than the pixel's value of the background image.

The test was carried out using 4 video test materials for each edge detection methods. Every video has 450 frames with the 15 seconds of duration and 30 fps specification. system gets the results of accuracy testing values in detecting the number of vehicles that violate lane markings by 100% and 0% of the error rate for all edge line detection methods. The edge detection method that has the best performance in the detection of lane mark violations is the Roberts edge detection method with an error rate of 0 % for the first video data testing, 20,89 % for second video data testing, 41.78% for third video data testing and 53.33% for the fourth video data testing.

Keywords: *image processing, canny edge detection, hough transform, lane markings, binary images.*