

ABSTRACT

Each year, about 1,24 million people die as a result of road traffic accidents around the world. 92% of road traffic accidents occur in developed countries, including Indonesia. 22% of the victims are pedestrians, because of that pedestrians known as most vulnerable road users. The majority of pedestrian accidents are caused by driver's negligence on the road. To minimize accidents on pedestrians, we need to develop a driver assistance system for vehicles that is simple to use and reliable.

Therefore, we implement the HOG+SVM, a pattern recognition method, to detect pedestrian objects. The HOG+SVM method will be implemented for Android mobile application and placed in the vehicle with smartphone car holder as a tool to put the device on the car dashboard. The apps can detect pedestrian objects then give a warning to the driver if the pedestrian objects are too close with the vehicle or before the possibilities of accident occur.

The results of this research were obtained average accuracy for cases of pedestrians in urban roads in Indonesia about 71.38%. As for the performance gained speed detection is up to 27 fps. So that, the system can be categorized as a real-time detection system.

Keywords: computer vision, pedestrian detection, HOG+SVM, image processing, mobile application