Abstract

Currently, the ownership of motorized vehicles in Indonesia continues to increase. As the number of motorized vehicle ownership increases, the number of traffic accidents also increases. Based on data from the Korlantas Polri published by the Ministry of Transportation, the number of traffic accidents in Indonesia will reach 103,645 cases in 2021. This number is higher than the data in 2020 which was 100,028 cases. Many studies have been conducted to prevent accidents by utilizing existing technology, one of which is a sleep detection system. The sleep detection system uses the Deep Neural Network (DNN) method, Haar Cascade and then to detect the driver's eyes are often blinking or closed. The detection process only focuses on the eyes so that it can be used on people who use masks and do not wear masks, because of the Covid-19 pandemic, everyone who will leave the house is required to wear a mask. By utilizing DNN to detect faces using masks, then detect the eyes on the detected faces and detect the condition of the eyes being open or closed with Haar Cascade. The results of the DNN system with Haar Cascade managed to get an accuracy of 81% using DNN for face detection and Haar Cascade for eye detection.

Keywords: image processing, deep neural network, haar cascade, mobile net, circle hough transform, drowsiness detection system.