

## ABSTRACT

Congestion is a problem that often occurs in several big cities in Indonesia. The traffic jam itself consists of several factors such as the large number of vehicles that pass, and the number of vehicles that park illegally alongside a road. To overcome the congestion that is rife, we need a system that can identify vehicles that violate road markings, especially those that are prohibited from stopping. The approach taken is to take an image in the form of a video using a webcam that will be processed to obtain results in the form of detection of vehicles that violate illegal Stopping on road markings.

In this Final Project uses the Convolutional Neural Network method where Convolutional Neural Network is a method used to detect images, and Region of Interest to reduce the detection area where both of these are useful for detecting vehicles on the image. From these results it is hoped that the system can distinguish vehicles that break with vehicles that do not violate Stopping on road markings.

Performance in this study was analyzed through parameters, such as accuracy, *Frame per Second*, and computational time. In this research, it is known that the comparison of the Number of Training Data is greater than the Data Test has a higher probability than the others, has optimal accuracy at a distance of 5 meters, with an average accuracy of 100%, and an average accuracy of 80% when tested on front view objects, 100% on rear view objects, and side view. Whereas for computing time the system has a computing time of 30 - 33 seconds on the first *device* and 4 - 8 seconds on the second *device*, and has a value of *Frame per Second* of 1.5 on *device* first and 7.5 on *device* second.

Keywords: *Faster Region Convolutional Neural Network, Vehicle, Region of Interest*