

ABSTRACT

As time goes by, when toll roads exist in Indonesia, there are several car drivers who are often seen using the shoulder of the road as a parking space or for passing other cars which is prohibited unless when there is an emergency. This can disturb other toll road drivers who have emergency situation who should use the shoulder of the road and can cause traffic jams.

With the Intelligent Transportation System (ITS) and using one of the Deep Learning Algorithms, namely Single Shot Detector (SSD), it is hoped that a method will be created to detect vehicles that violate the road on toll roads. The way this system works is that a camera that is installed on a toll road crossing bridge that has been properly installed SSD will detect every car that passes or stops in real time, which later if the camera detects a car that violates the shoulder of the toll road, the system sends a notification message to toll road officials via Telegram bot.

The purpose of this system is that the output from the camera can detect cars accurately, then the information obtained from the system can be delivered to toll road officials via the Telegram bot. The results of the best performance configuration in this research are datasets with a ratio of 80%:20%, 0.08 learning rate, 150 epochs and 6 batch size.

Keywords: *Intelligent Transport System, IOT, SSD*