

## ABSTRACT

World nowday is heading toward significantly, including the industry revolution 4.0 where every device or hardware will be connected to the internet and or running some system automatically, therefore we need tools or devices that will help us to integrated the government system later such as the system of detection for traffic violations especially for cars. Also with this tool, author expected to help reduce the level of traffic violations at this time.

Using image processing for retrieving an information nowadays already often used, especially for automation. By using image processing, author designed a system to detect traffic violations at crossroads for automobiles using minimum architectural systems such as the Raspberry Pi.

The results of this final task from this system can work well with the results detection of violations accuracy 100% and the results of the type of violation decisions is 92% using SSIM and also founded the system is feasible to work on a minimum system and uses multiprocessing techniques which improve performance system and speed up compute time.

**Keywords:** *industrial revolution 4.0, image processing, automation, smart cities, SSIM, Raspberry Pi, multiprocessing.*