

## ABSTRACT

Final project discusses a system that can be applied to identify the types of vehicles both two-wheel or four-wheeled highway sector in using a single camera. This identification system using motion detection with *frame difference* method and identification system using *template matching*. This final project will give priority to the identification of both types of vehicles such as four-wheeled vehicles (cars, vans, box cars, pickups, trucks) and motorcycles. In previous testing existing systems that can detect the speed of a vehicle but have not been able to determine whether a car or motorcycle so that passing vehicles are considered the same vehicle. So that the system is required which identifies the type of vehicle expected to be useful to complement the existing system in helping the police to regulate traffic such as passengers or in the reverse flow or occlusion

The steps to create this system is going to do some testing with real data capture and the results will be presented. Testing this system will use their own test video. Testing this system will also be conducted at various levels of varying speed and many various of template. In addition, tests conducted at different light intensities in the morning, afternoon and evening with one-way road vehicle flows. Video capture will be done from the side with the camera is almost the same height with a height of about one meter. Various problems and noise in the data object is also considered. The system can accurately evaluate the position and orientation of moving objects.

Results from the implementation of this system is how the system is able to identify which type of vehicle that moves through the sector in a highway with a margin of error in the process of small cultivated. The selection threshold value and use of appropriate video frame rates are expected to provide optimal performance.

Keywords: Motion Detection, Video, Frame, Frame Difference, Template Matching Method.