

## **ABSTRACT**

*The growth of the transportation sector in Indonesia is so high that safety and road equipment facilities need to be improved. The traffic sector has the task of regulating, monitoring and maintaining road equipment facilities. Cameras or CCTV are a component of smart traffic management for monitoring vehicle traffic. Traffic monitoring through cameras can produce a lot of information that is used for vehicle identification data collection which is useful for overcoming traffic problems. Color is an important identity of a vehicle that can recognize the identity of the vehicle to add information if the vehicle number plate is blocked and damaged. However, in recognizing and predicting colors accurately, there are still many obstacles, including resolution that affects image quality. Determining car color becomes difficult and varied due to human visual limitations, fatigue levels and different perceptions in determining car colors. Digital image processing with computer vision can help identify and classify vehicle colors. The characteristics used are the characteristics of the color histogram RGB (Red, Green, Blue) and the characteristic HSV color histogram (Hue, Saturation, Value). By implementing the Learning Vector Quantization (LVQ) method. Which is able to detect well at a learning rate value of 0.015, the number of 500 iterations with 18 image histogram frequencies, as well as initialization weights of 8, 1661 training data images and 710 test data. The maximum accuracy produced by the system is 66.682% for training and 67.042% for testing.*

*Keywords: Car Color, Learning Vector Quantization (LVQ), RGB (Red, Green, Blue), HSV (Hue, Saturation, Value)*