ABSTRACT

Vehicles are the most widely used mode of transportation throughout Indonesia. Vehicle license plates serve as the identification mark for motorized vehicles in Indonesia, consisting of a combination of letters and numbers. Each region has a different character code for vehicle license plates. Currently, the government has implemented an electronic ticketing system for vehicles in Indonesia, necessitating a system capable of detecting these electronic violations.

In this Final Project, a system has been developed to read vehicle plates, particularly those of motorized vehicles. The method employed is the Super Resolution Convolutional Neural Network (SRCNN) to enhance the accuracy of license plate recognition, along with Very Deep Super-Resolution (VDSR) to explore performance improvement in Super Resolution by increasing the network depth.

The dataset used is sourced from the information and communication office of Malang city, comprising 950 images of vehicle license plates. The final results indicate that the VDSR method, utilizing the Adam optimizer and ReLU activator for convolution layers, achieved a PSNR value of 39.756 dB and MSE of 0.001. Meanwhile, the SRCNN method with the same parameters obtained a PSNR value of 37.329 dB and MSE of 0.001. Based on testing with the dataset, it can be concluded that the VDSR method outperforms when compared to testing using the Set14 dataset. These results demonstrate that VDSR is capable of effectively reconstructing super-resolution images.

Keywords: *Vehicle Number Plate, Super Resolution Convotional Neural Network, Very Deep Super-Resolution, Classification.*