ABSTRACT

The use of robots has now been able to replace the role of humans in carrying out daily activities. The automotive industry has adopted many systems based on Artificial Intelligence which are applied to automatic steering systems or can be called self-driving.

This final project is made of a robot that can move following the instructions of traffic signs in Indonesia. There are 3 types of traffic signs that are used as input, namely right turn command signs, left turn command signs, and STOP command signs. The method used in the classification of traffic signs is Convolutional Neural Network (CNN). CNN is a branch of Artificial Neural Network that can perform feature extraction and create the required categories. The results of the classification become an order for the robot to move according to the instructions ordered.

The result of this final project is that the system is able to detect and classify traffic signs with 100% accuracy on parameters of high light intensity (30 lux) and on all parameters of distance testing. This system uses a learning rate of 0.001, epoch 10, and a data partition ratio of 80:20.

Keywords: *digital image processing, self-driving, robot.*