ABSTRACT

Safety in using transportation is very important, as is using trains as a mode of transportation. One of the important parts in the safety of train travel is the condition of a good railroad track. However, train accidents due to derailment still happen in Indonesia, therefore it is necessary to monitor the railway infrastructure. However, the supervision of railroad infrastructure still uses a manual system.

This Final Task aims to create a system that can be used to detect and classify damage to railroads using the Convolutional Neural Network (CNN) method. Classification are divided into 2 classes, namely defective and non-defective.

The test scenario in this final project uses a number of 384 images. System performance will be measured by analyzing the parameter values of resize, learning rate, and batch size, with the output results of accuracy, precision, recall, f1-score. The best results are obtained with an accuracy value of 80%, for defective the precision value is 81%, recall is 74%, and F1-score is 77%, for Non-Defective the precision value is 80%, recall is 85%, F1-score is 83%.

Keywords: *Railroad, Convolutional Neural Network (CNN), Defective, Non-Defective*