ABSTRACT

Indonesian Railways operates every day. Every Indonesian Train has an identity label on each carriage. The identity label on the Indonesian Railways passenger carriage has data such as train class, type of train, year of train operation, serial number of Indonesian Railways carriages, electricity voltage, passenger capacity in kilograms, and train operating lines. The function of the identity label on the Indonesian Railways carriages is the basis for the use of Indonesian Railways' carriages. For the gradual monitoring and data collection of Indonesian railway carriages, especially on monitoring, a system is needed to read the character on the identity label of Indonesian train cars automatically and produce an output with maximum an accuracy of 90%.

In this final project, a system for reading character label identity automatically will be designed on Indonesian train carriages using the Deep-Learning method. This system utilizes edge devices as a medium for implementing the Deep-Learning system for Optical Character Recognition on the identity label of Indonesian train cars.

The results of the analysis show that the parameters of light, distance, frames per second, and the appropriate angle of frame capture can determine the output with high accuracy. The results showed that the Deep-Learning method of reading characters on the identity labels of Indonesian train cars can read automatically with a maximum accuracy of 98.1% in Real-Time.

Keywords : *Object detector, Deep Learning, Raspberrypi, Raspberry Pi camera, Optical Character Recognition, Indonesian Railway Carriage*