# ABSTRACT

Automated Guided Vehicle (AGV) is a vehicle that can move automatically because AGV has a navigation system that can be moved from the starting point to the destination. In general, the AGV navigation system only uses lines to guide the direction of the AGV movement so that the direction and movement of the AGV is a little limited. And in general, AGV cannot distinguish the objects that they will bring so the objects that will be carried by AGV will be sorted first by humans.

To overcome this problem, in this final project research will be designed a system that promotes a system using artificial neural (ANN) Backpropagation so that the AGV can support the object they will carry and make the object detected in accordance with these objectives. In this final project, research will be proposed on object recognition using the Backpropagation ANN method in the classification process and the Faster R-CNN algorithm for training methods for a dataset in ANN.

Testing in this final project research was carried out using 3D objects consisting of several biscuit cans. The results of this test produce an average error value on every data in the training with the level of detection accuracy based on data obtained in training reaching 90% insufficient light conditions. The results of detecting and introducing the object will be sent to the microcontroller from a personal computer (PC) via Bluetooth so that the AGV can move according to the object to be brought.


Keywords: Automated Guided Vehicle, backpropagation, artificial neural networks, training, F-R-CNN, dataset, error