

ABSTRACT

In this day and age, technology has developed rapidly, succeeding is a robot. Robots made to facilitate human work. One type of robot is AGV. AGV is a smart programmable vehicle. In this final project an AGV will be designed that can challenge objects based on their shape through image processing so that the process of mobilizing goods in the industry can be done automatically and efficiently.

AGV will move automatically following a predetermined line (AGV line follower) to the destination based on the shape of the image processing results. The results of image processing will be sent to AGV via bluetooth. In this final project, the path has been divided into 5 different objects. If in the middle of the path there is a barrier object, then automatically, the AGV will move and move back will move the barrier object has been moved from the lane. The navigation system consists of the distance and turning point according to the requested object already stored in the AGV database so that the AGV reaches the desired destination. To keep the AGV in the middle of the line and not out of line, fuzzy logic control is used.

In this final assignment, the success of AGV towards place 1 is 83.33% with an average speed of 6.44 m / s, place 2 is 66.67% with an average speed of 6.33m / s, where 3 is 100 % with an average speed of 6.62 m / s, place 4 is 66.67% with an average speed of 6.28 m / s and place 5 is 83.33% with an average speed of 6.24 m / s. AGV can also receive data sent via Bluetooth very well. with accuracy reaching 100%. In addition, AGV is able to challenge moving objects within 30 cm with a success rate of 80.00%, at a distance of 20 cm with a success rate of 83.33% and at a distance of 10 cm with a success rate of 90%.

Keywords: Automatic Guided Vehicle (AGV), AGV Line follower, Fuzzy Logic Control