

## ABSTRACT

AGV (Automatic Guided Vehicle) robot is included in the type of mobile robot or moving robot. This robot runs based on a predetermined path. This AGV robot was created to develop industrial technology, especially in Indonesia. This robot serves to transport goods from one place to a certain place. In a case where the robot used only has a vision sensor located on the robot with a navigational landmark system that is in the sky so that when a multi-robot system is made there will be several obstacles, including the relatively expensive financing side because the entire process is made in one robot so that when more than one robot is made, the processing components increase, prone to collisions because they are directed at the same landmark.

By making landmarks on the robot and the target, also moving the camera to the ceiling (inverted camera) with the aim of the camera workspace in detecting the movement of the robot is proposed in this study. A fuzzy logic control algorithm is used to determine the right motor speed ( $V_r$ ) and left motor speed ( $V_L$ ) in PWM. The input used is the magnitude of the deviation angle of the robot direction with the target and distance. The distance here is taken from the length of the vector. Vector is obtained from the coordinates of the robot's point, direction, and target. In one case the robot is at coordinates A (41, 164), coordinates B (60, 164), and coordinates C (245, 73). From these coordinate points, the angle is  $155.96^\circ$  and the vector length from the robot to the target is 223.37. Got  $V_R$  117 and  $V_L$  30 PWM. In the calculation, the results obtained are  $V_R$  116.4 PWM with an error rate of 0.0051.

Keywords: Robot AGV, computer vision, optical flow, fuzzy logic