

ABSTRACT

Robot is a tool that serves human in carrying out their duties. Many robot models were developed by researchers, mobile robot is one of them. Mobile robot is a robot construction that has a characteristic of having actuators that can move the position of the robot from one point to another, either using a particular path or that can move automatically with artificial intelligence and control method it has. With control methods embedded in mobile robot and is able to explore that it can be a means of conducting research in exploration, conducting surveys of conditions and situations around whether it is for industry or post-disaster, thereby reducing the change of being effected directly by disasters when conducting surveys.

One of the control methods that can be used in making automatic robots is the fuzzy logic method. fuzzy logic is generally applied to problems that contain elements of uncertainty, inaccuracy, and disruption. fuzzy logic is developed based on human thinking that has many possibilities. There are three main processes in the implementation of fuzzy logic which are fuzzification, inference system, and defuzzification.

In this final project, fuzzy logic control system is implemented in underwater robot position control system. The intended output is that the robot can move its position steadily from the initial location of the robot to the destination location even though there is a water current that can change the direction of its movement. When testing the accuracy of the GPS module is 3.52 meters for its maximum value. And the precision of the CMPS sensor data has a error rate readings of 3.451. The test is done with the range of distance between the starting point with the destination point is 19.74 - 33.94 meters from the initial location of the robot is turned on, with a relatively equal average time range. With time lock location GPS module average 24.53 seconds.

Keywords: *Fuzzy Logic Control, GPS, Mobile Robot*