

ABSTRACT

In this current era where the use of robots is increasing rapidly and more robots become human-like and autonomous, there are still unknown domains that researchers can explore. One of those unknown domains is to make a robot able to remember things just as a human would. Humans remember things to help them achieve instant decision results, like simple math or how to drive. If a robot can memorize it instead of generalizing it, it will have less time to do an objective such as interact with real-world objects. So a robot needs a memorization process to effectively and quickly interact with the real world.

Thus, in this research, we propose a memorization module that can identify, extract, and store an object's unique features. This is done to make the robot able to remember the unique features of the detected object so that when it sees it again, it doesn't need to spend time analyzing the object. We divide the experiment into two categories, learning experiment and testing experiment. The learning experiment, where the robot stores features from landmarks in an environment, is conducted 4 times. Testing experiments, where the robot goes through the same environment but with different conditions i.e., (direction of the robot's path, light condition, and robot speed) are carried out 8 times. Accuracy is measured by comparing how much data matches during testing experiments with memorized data from learning experiments resulting in 32 accuracy data. In this study, an accuracy of 88.88% was obtained for the memorized features. This research also created a map that represents the general position of the landmarks that have been detected. From the map, it is found that the position of the landmark is relatively consistent across the 8 tests conducted.

Keywords: Memorization, unique characteristics, robot.