

ABSTRACT

The development of technology in the current era is very rapid, especially in the use of robots. Therefore, many industrial companies have created a robot in order to help ease the human burden, because a robot is a mechanical device that can perform the human tasks, Such as human supervision and control. As for industrial robots that are used to assist humans in moving an object without having to lift an object, called a robotic arm, many studies have utilized it to move objects with a variety of different movements and processes.

In this final project, a robotic arm automation is designed for interactive use. The users can easily control the robot arm automatically using Arduino. The robot arm has 4 Degree Of-Freedom (DOF), And each DOF is driven by a servo motor which is controlled by a microcontroller in the form of an Arduino.

From this study a robotic arm that has 4 Degree of Freedom (DOF) with the help of Arduino as an input that facilitates the movement of the servo motor. With the help of using an image processing system from the camera as a tool to detect objects and a repetition program so that the robot arm can perform actions automatically without having to be moved manually. The test was repeated 5 times and 10 times on each object shape and color parameter to determine the accuracy of the robot arm in carrying out the action of moving objects with the results of 98% success with slow belt speeds, 94.4% success with medium belt speeds, 85% success with fast belt speed.

Keywords: *Arm Robot, 4 DOF, Arduino*