ABSTRACT

The increase of the human's life necessities, force the industrial sector as the producer to applies the technology in their activities. In addition, the human's limitation to do their jobs becomes the reason why the technology must be applied in the production process. An example of technology application in industrial sector is the use of robot.

In this final project, an industrial robot, that can grip an object based on their physical condition, will be developed. The object gripper robot system will give a difference gripping execution based on the object's size by using ultrasonic sensor to get the object's dimension, semi-automatically. In the decision making process, the system uses *fuzzy logic* control, so the system will be adapted by the object's dimension and groups them into three kinds of objects, such as small, medium, and large object. The successful parameter of the robot can be seen by its percentage of success to grips the object according to object's dimension. The percentage of success is 70% from the total selected objects. The system is expected to facilitate the industrial process and increases the production performance based on the speed of object's moving performance, accuracy of object's selection, and decision making aspect.

Keywords: *Industrial Robot, Gripper Robot, Fuzzy Logic, Ultrasonic Sensor*