ABSTRACT

Currently the use of a robot has been widely used in daily life. An example of a robot application in everyday life is an automatic vacuum cleaner robot at home, the robot uses an ultrasonic sensor to provide information on the robot's motion. The use of robot vacuum cleaners generally performs thorough cleaning in every corner of the room, not at selective points that can be selected.

From this it is proposed a selective point cleaning system using an independent object detection navigation system for garbage collection robots using image processing. The robot will only move to a point that is detected as a trash object by the camera. By optimizing the cleaning path navigation for the cleaning points, the robot's work becomes more efficient, the path taken is shorter, so that the robot works faster and the robot's components are not easily worn out due to shortened working time.

The system to be created must be able to recognize or distinguish between robots and trash. After being able to distinguish, the system can find out the location of the object. From the information on the location of the object, it will generate a path for the robot to transport all the garbage and provide information on how the robot moves, namely the direction of turning, turning angle and distance traveled.

Kata Kunci: *Navigation System, Image Processing.*