ABSTRACT

Hough Transform algorithm and Radon Transform algorithm both of them had advantages and disadvantages. Therefore, in this final project will be compared to obtain the most optimal for detection of N-sided polygon objects. The parameter comparison of the two algorithms based on the performance of computing time and the level of system accuracy. By knowing the system performance for shape detection, then the next is expected to be implemented in robotics applications.

On this final project have been done several research to determination the type of object based on the number of vertex formed, the number of sides that are formed, and the number of variations of the angle formed. The system was tested by using objects triangular, rectangular, pentagon, and hexagon. Testing is done from the acquisition of objects based on differences in distances, angles, sides, and under different light intensities. For the noise image, added fabrics noise fabrics and noise sand over the object before the acquisition.

Of the 140 results of image acquisition were tested for detection of N-sided polygon, Hough transform algorithm provides an accuracy value of 70%, while the Radon transform algorithm provides an accuracy value of 35.71%. Average computing time Hough Transform algorithm 2038 sec, while the average computing time of Radon transform algorithm 13 678 seconds.

Key words: Digital Image, Hough Transform algorithm, Radon Transform algorithm