

ABSTRACT

Automatic parking system is a system that has a valet parking like behaviour. In this system, mobile robot is designed to be able to park the robot automatically. The parking arena that used in this system is a modified parking arena with line and symbols on the floor for robot's navigation and information. This robot used that line for following navigation and using digital image processing.

Image processing is processed in a microcomputer inside the robot. Camera detect lines and symbols in each parking slot and able to navigate through the line until the robot stop at the desired parking slot. The processed image is transferred to microcontroller to move the robot. From the results of the test, we can conclude that the best thresholding value is between the two peaks in histogram. From the second test, the result is illumination affect the detection process. And from the last test, the result is the robot's speed affect the performance of the lines detection. System can work 100% with 80 PWM and 60% with more than 120 PWM.

Keywords : line detecton, thresholding method, image processing