

ABSTRACT

Image processing has evolved and applied for various uses. In previous research the image processing has been applied to detect color for robot. This system is in autonomous roboboat navigation. This robot applies image processing system to navigate with movement following the direction of red or orange object. This robot is still considered less efficient because it still uses a low mobility PC.

This final project aims to facilitate the robot to be easier in controlling and detecting errors because they do not use PC's anymore to review the robot system, but using a cheaper Single Board Computer and high mobility. The system created is a basic system that can later be developed according to the function. The system is made by Raspberry Pi and Raspberry Pi Camera for detecting specific color. The system uses OpenCV for its library and Python as its programming language.

After an experiment on the system has been made, it is found that the color detection system made on the color space RGB and HSV will optimally detect the color at 90° inclination angle and light greatly affect the detection process. Light intensity that used in this project on 380 lx

Keywords: Raspberry Pi; Raspberry Pi Camera Module; image processing; RGB; HSV