

ABSTRACTION

Autonomous Robo boat is one of the technological development of autonomous robots that can be implemented on the surface of the water or can be called a robot ship without a crew. The navigation system is one of the most important factors in making robo boat autonomous, that is to set the direction of motion of the ship in order to pass the path to the destination.

In this thesis the author to design and implement autonomous robo boat with raspberry pi as a control and navigation system. OpenCV library on raspberry pi is used for Image Processing in detecting shipping lines using the HSV Filter. This method will make the detection of shipping lines based on the basic color, color strength and brightness of color for the line that will be detected, so that the results would be more accurate path detection.

After testing, the navigation system requires about 95% of CPU Usage, Memory Usage yet requires only 50MB with Time Process value as the delay is 0.1-0.3 seconds. Results of testing the navigation system has an accuracy value of 92.5%, so it can be concluded the use of HSV filter on image processing is quite representative and responsive to automatically regulate navigation on the ship without a crew.

Keywords: raspberry pi, HSV filter, image processing, navigation robo boat