Abstract

Recognition of road condition is very important for blind people to help them through their activities. To solve these problems, blind people need tools to access surrounding areas. One of the tools that most blind people use is stick.

At this time, the technology based on digital image for visually impaired tools are being developed. In this final project, a system of staircase detection based on digital image processing is designed. The goal of this system is to detect if there is any staircase ahead and then to know the type of staircase, is it ascending or descending stair. Feature extraction method that used in this final project are Hough Transform. Then classification using Support Vector Machine (SVM) method is used to determine the type of staircase.

The result of this final project is the creation of system that can detect the type of staircase with an accuracy rate 83% and it can be implemented to raspberry pi.

Keyword: Blind People, Hough Transform, Support Vector Machine