

Pothole Detection in Asphalt Pavement Images

This paper has worked on asphalt pavement images to detect pothole. The work is done in three steps: 1) image segmentation, 2) shape extraction, and 3) texture extraction and comparison. A histogram shape-based thresholding algorithm has been used to separate the defected region from the background by transforming original color images into gray-scale images in the segmentation part.

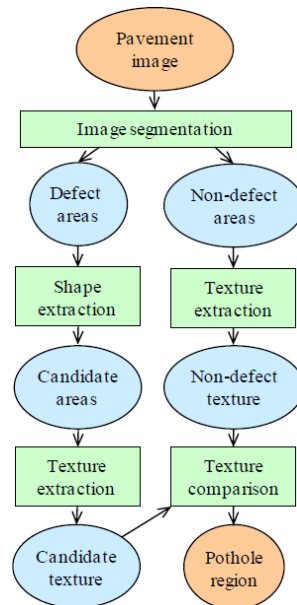


Figure 1. Pothole detection model

After segmented the defect and non-defect part, the shape extraction part has worked on the defected area, for measuring shade of the region here puts a threshold value and then shrinks the shade region to minimally connected skeleton morphological thinning is used. The standard deviation of gray-level intensity values as a statistical measure. it has been used to describe the texture of both the inside and the outside region. In third, it has worked for both defect and non-defect region and compares the texture.

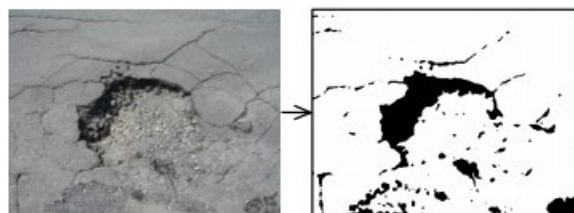


Figure 2. Result of image segmentation for two potholes

In this paper, the segmentation part is related to this work because it aims to segment the damaged area. However, this paper's method has segmented both defects and non-defect areas, and our proposed method is to segment the only damage region. Here, the method of shape extraction and texture extraction can be useful for improving, which can be for better output.

References:

- [1] Koch, C., & Brilakis, I. (2011). Pothole detection in asphalt pavement images. *Advanced Engineering Informatics*, 25(3), 507-515.