Segmentation via thresholding methodologies by using measure of fuzziness towards blind navigation

Abstract

Blind navigation is specialized research directed towards the development of navigational aid for blind people to minimize assistance from sighted individuals during navigation. In this paper, two methodologies of segmentation are detailed and certain aspects of the methodologies are compared. Measure of fuzziness is applied in both the segmentation methodologies to find the threshold values. These methodologies are of an automated process resulting in the elimination of human circumvention. The segmentation methodologies have been found to work suitably for the purpose of blind navigation as shown by the results provided. The first methodology was developed for a single camera whereas the second was developed for a system of stereo cameras. A comparison in terms of results from both the methodologies is also discussed and finally, conclusions derived from the methodologies are presented.