Abstract

Color image segmentation is currently a very emerging topic for researchers in Image processing. Clustering is a frequently chosen methodology for this image segmentation task. But for a better segmentation, there arises the need of an optimal technique. In this paper, we propose an integrated approach for color image segmentation which is a new of its kind. Here, we integrate the famous k-means algorithm with watershed algorithm. But, here we chose cosine distance measure for k-means algorithm to optimize the segmented result of the later one. Also, as color space has a leading impact on color image segmentation task, so, we chose HSV color space for our proposed approach. Since usually the noise arises during the segmentation process, so here the final segmented image is filtered by median filter to make the output image clearer and noise free. The result of the proposed approach is found to be quite satisfactory.

References

- http://commons. wikimedia. org/wiki/File%3AHSV_color_solid_cylinder_alpha_lowgamma. png
A New Approach towards Clustering based Color Image Segmentation

Issue 3 (May 2014).
- http://people.revoledu.com/kardi/tutorial/kMean
- http://www.mathworks.in/help/stats/pdist.html
- Irwin Sobel, 2014, History and Definition of the Sobel Operator
- http://www.mathworks.in/products/image

Index Terms

Computer Science

Image Processing
Keywords

Image Segmentation  Color Image Segmentation  HSV Color space  K Means  Cosine Distance  Watershed Algorithm.