Abstract

Image segmentation is a necessary task in computer vision and digital image processing applications, where foreground objects are to be separated from background. Many thresholding techniques are found in literature with their own limitations. The Gray level Spatial Correlation (GLSC) Histogram is used in entropic techniques to decide the threshold. In this paper we propose an improved GLSC Histogram, computed with varying similarity measure ($\zeta$)
by considering local and global characteristics, because Yang Xiao et. al. used a constant 4 as the similarity measure by considering the image local properties only, which does not suits for all types of images and probability error is minimized by redistributing the missing probability amount in floating precisions. For low contrast images contrast enhancement is assumed. Experimental results demonstrate a quantitative improvement against existing techniques by calculating the parameter efficiency $\eta$ based on the misclassification error and variations in various yielding towards ground truth threshold on two dimensional histogram of image.

Reference

- Yang Xiao, Zhiguo Cao, Tianxu Zhang “Entropic thresholding based on gray level spatial correlation histogram”, IEEE trans. 19th international conf., pp. 1-4, ICPR-2008,

Index Terms

Computer Science Image Processing
**Key words**

- Entropy
- GLSC histogram
- Image segmentation
- Threshold