Abstract

Enhancement of human vision to get an insight to information content is of vital importance. The traditional histogram equalization methods have been suffering from amplified contrast with the addition of artifacts and a surprising unnatural visibility of the processed images. In order to overcome these drawbacks, this paper proposes interative, mean, and multi-threshold selection criterion with plateau limits, which consist of histogram segmentation, clipping and transformation modules. The histogram partition consists of multiple thresholding processes that divide the histogram into two parts, whereas the clipping process nicely enhances the contrast by having a check on the rate of enhancement that could be tuned. Histogram equalization to each segmented sub-histogram provides the output image with preserved brightness and enhanced contrast. Results of the present study showed that the proposed method efficiently handles the noise amplification. Further, it also preserves the brightness by retaining natural look of targeted image.
Iterative Thresholded Bi-Histogram Equalization for Medical Image Enhancement

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Index Terms

Computer Science Image Processing

Keywords

Bi-Histogram Equalization contrast enhancement Absolute mean brightness error (AMBE)
Selection Brightness preserving with Plateau limit (ITSBPL)

Multi-Value Selection (MVBPL)

Mean Threshold Selection (MSBPL).