Abstract

There are various methods available in the literature for improving the visual quality of an image. Contrast enhancement of an image by histogram equalization is one such technique. But histogram equalization alone results in data loss and also the mean brightness of the resultant output image approaches to the middle gray level. In this paper, the edge strengths of the original and the equalized images have been found by four edge detection algorithms, Robert, Sobel, Prewitt and Canny separately and then depending on their edge strengths and following a simple equation, fusion of the two images are done. These resulting fused images contain all the useful data of the original image as well as their contrasts are enhanced. The Standard Deviation and Gradient of the respective fused images are then compared and it is found that for almost all images image fusion using Canny edge detector as a filter yields best result.
A Study of Contrast Enhancement by Image Fusion using Edge Detection Techniques

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**Index Terms**

Computer Science

Image Processing
Keywords

Contrast Enhancement  Histogram equalization  Standard Deviation  Average
Gradient
Robert
Sobel
Prewitt
Canny
Image Fusion.