A novel Image Inversion based Two Level Histogram Equalization (IIBLHE) for contrast enhancement is proposed in this paper. In this method, the first level of equalization is carried out in such a way that the image is inversed first and then histogram equalization is applied; again inversed and the second level of equalization is performed by modifying the probability density function of that resultant image by introducing constraints. This technique of contrast enhancement takes control over the effect of global histogram equalization (GHE / HE) so that it enhances the image without causing any loss of details in it. This approach provides a convenient and effective way to control the enhancement process, while being adaptive to various types of images. Experimental results show that the proposed method gives better results in terms of PSNR values when compared to the existing histogram based equalization methods.

Reference


Index Terms

Computer Science

Image Processing

Key words

Contrast Enhancement

Histogram
Histogram Equalization

Probability Density Function (PDF)

Cumulative Density Function (CDF)