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MULTI-HISTOGRAM EQUALIZATION USING ERROR BACK PROPOGATION NETWORK (MHEBPN)

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ABSTRACT

Histogram Equalization is a simple and effective technique for image contrast enhancement but in does not preserve the brightness. Bi-histogram equalization (BBHE) has been proposed and analyzed mathematically that it can preserve the original brightness to a certain extends. Image Dependent Brightness Preserving Histogram Equalization (IDBPHE) technique is a better technique for contrast enhancement but it's not always giving best Absolute Mean Brightness Error (AMBE). Multi Histogram using Error Back Propagation Network (MHEBPN) provides not only better contrast but also it gives better scalable brightness preservation. First the image is decomposed into equal area sub-images based on Probability Density Function (PDF). Curvlet transform is used to identify the bright region. Separation of histogram on the basis of threshold level which give the minimum AMBE value. Error Back Propagation Network (EBPA) is used to maintain the correct Euclidean distance which gives the better value of PSNR. Experiment results shows that proposed method gives the better AMBE and PSNR results compared with other methods.

KEYWORDS: Histogram Equalization, EBPA, PDF and CDF