Abstract

Medical image processing is a challenging field of research since the captured images suffers from the noise and poor contrast. The efficiency of the medical image processing depends on the quality of the captured medical images. Major factors for the low contrast medical images are age of capturing equipments, poor illumination conditions and in-experience of medical staff. Thus, contrast enhancement methods are used for improving the contrast of medical images before being used. In this paper an combination of the contrast limited adaptive histogram equalization (CLAHE) method and the wavelet based Fusion techniques are used for designing the efficient medical image enhancement method. Method is capable of adapting the Fusion rules adaptively for best enhancement results. First CLAHE image enhancement is used for improving the contrast of medical images. Then in second stage 2D Discrete wavelet transformation based adaptive image fusion is used for fusing the original and CLAHE output images. For testing the performance SNR and entropy are calculated and used as parameters. It is found that based on adaptive Fusion the visual content of the medical images are efficiently improved under all kind of capturing environments.
References

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Index Terms

Computer Science  Image Processing

Keywords

Medical Image enhancement, RGB color spaces, Contrast limited Adaptive Histogram Equalization, Wavelet Fusion, Entropy.