Abstract

Image processing plays an important role in various field of human endeavor. Retinex method is widely used to improve the quality of the processed images. It provides better dynamic range compression, lightness rendition and color constancy. It also aimed at mimicking human vision system and lead to efficient algorithm for enhancing local image contrast. Various researchers proposed distinctive methods for enhancing image quality. The oldest and most popular image enhancement algorithm is histogram equalization which is used to improve the contrast of image. Other methods are Single-Scale and Multi-Scale Retinex (MSR) used for image quality enhancement, but cause some halation problem, high computation time and does not preserve edges. Recursive bilateral filter can able to do its best for solving the problems faced in previous algorithms but still has high computation time. In this paper, we proposed fast and efficient method for improving the quality of an image and reducing the computational time using three main steps: 1. Apply Fast Fourier transform to the input image, to convert the image frequency domain from spatial domain and multiply gaussian filter with illumination in frequency domain, this will speed up the processing time and provide better result. 2. Retinex algorithm is used to
estimate the reflectance by subtracting illumination image from original image. 3. Bi-histogram equalization to improve its visual effect. Lastly, the algorithm is evaluated from subjective and objective aspect. Experimental results demonstrate the effectiveness of the proposed method.

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Index Terms

Computer Science  Algorithms

Keywords

Image enhancement, Retinex algorithm, Fast Fourier transform, Bi-histogram equalization