Abstract

Image Restoration is the method of recovering original image from degraded image and also to understand the image without any artifact errors. Image restoration methods can be considered as direct and indirect techniques. Direct techniques are used when restoration results are generated in a simple one step fashion. Similarly, indirect techniques are used when restoration results are obtained after a number of iterations. Some of the Simple direct restoration techniques are inverse filtering and Wiener filtering and these methods require knowledge of blur function i.e. Point Spread Function (PSF), which is usually not available. However, ringing and noise amplification are unavoidable artifacts as it is impossible to estimate perfect PSF. The conventional regularization cannot be used to reduce above mentioned if PSF estimation error is large, so strong regularization is needed. In this paper Blind Deconvolution is discussed when blur kernel is unknown. In this paper, we have presented algorithm which contributes to the faster and efficient restoration with DWT Haar Transformation. The performance evaluation and analysis is done using various image restoration techniques like FFT and DWT transformation with different Wavelet functions like Haar, Daubechies, Symlets and Coiflets and also compared with FFT. On the basis of evaluation it has been concluded that DWT transformation is better than FFT. Later on, we have done analysis on the basis of wavelet functions and found that Haar wavelet function gives
higher value of PSNR and lower value of MSE.

References

- Ashwini M. Deshpande, Suprava Patnaik, "Comparative study and..."


**Index Terms**

Computer Science  
Image Processing

**Keywords**

Imagerestoration  Non-Blind Deconvolution  PSF  Image deblurring  Ringingartifacts  
Noiseamplification  
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