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RESEARCH ARTICLE

A Study on Image Restoration and its Various Blind Image Deconvolution Algorithms

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Abstract

Motion blur is an inevitable tradeoff between the amount of blur and the amount of noise in the acquired images. The effectiveness of any restoration algorithm typically depends on these amounts, and it is difficult to find their best balance in order to ease the restoration task. While the Point-Spread-Function (PSF) trajectories as random processes, expresses the restoration performance. The expectation of the restoration error is conditioned on some motion-randomness descriptors and the exposure time. By using blind deconvolution algorithms with estimated PSF on single-image; blur kernel is directly estimated from light streaks in the blurred image. Combining with the sparsity constraint, blind de-convolution algorithms and maximum likelihood estimation approach, it can be solved quickly and accurately from a user input image. This blind kernel (PSF) can then be applied to single-image to restore the sharp image. This paper describes the concept of Image Restoration and Blind Deconvolution Algorithms with various images.

Keywords: ***Image Restoration; Image Degradation; Deconvolution; Blind Image Deconvolution; Point Spread Function (PSF)***

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