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Restoration and fusion optimization scheme of multifocus image using genetic search strategies

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Keywords

multifocus image fusion, genetic search strategies, zero reconstruction error, contrast feature-vision system

Abstract

A novel and optimal algorithm is presented that is suitable for multifocus image fusion. A synergistic combination of segmentation techniques and genetic search strategies is employed in salience analysis of contrast feature-vision system. Some evaluation measures are suggested and applied to compare the performance of different fusion schemes. Two cases of the generated test images are discussed and extensive experiments demonstrate that in one case most fused images achieve reconstruction or optimized effects with respect to the reference image when the focus objectives are not overlapped blurred, and in the other case this method produces better results outperforming other conventional methods when the focus objectives are overlapped blurred. It is therefore shown that the performance of the fusion algorithm proposed optimizes further the fused image globally accomplishing absolute restoration or optimized fusion of multifocus image to the reference image. This algorithm is also suitable for the digital camera images of real scene and gets to be optimized well.



1.5 MB

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