Abstract

This paper presents the performance analysis of the LPG-PCA algorithm in deblurring of medical images. Medical images containing lot of information which are often affected by noise and artifacts, which leads to the inefficient diagnosis. LPG-PCA which is a statistical decorrelation technique is found to be one of the efficient methods which could be used in improving the performance of medical images. For better preservation of fine structures in an image, a pixel and its nearest neighbors are modeled as a vector variable whose training samples are selected using a moving window in the image. Such a local vector variable preservation leads to the selection of the similar intensity characteristics. This property of LPG-PCA technique is applied in image deblurring process using adaptive sparse domain regularization technique. This method involves clustering of data and finding the Sub dictionary of each cluster using LPG-PCA. Then the dictionary for input patch is selected using SVD technique and deblurring is done using regularization. Performance analysis of this technique is found using various image quality measures and results are found to be efficient than other conventional methods.
Performance Evaluation of LPG-PCA Algorithm in Deblurring of CT and MRI Images

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Index Terms

Computer Science
Image Processing

Keywords
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Local Pixel Grouping
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