Comparative Study of Different Wavelet Transforms in Fusion of Multimodal Medical Images

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Authors:
R. E. Masumdar, R. G. Karandikar

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Abstract

This paper presents a comparative study of image fusion of MRI and CT images using various wavelet transforms. The fusion of the images is done by implementing a multi-resolution decomposition method with the help of various wavelets. Entropy, PSNR and MSE are the parameters that are used as performance metrics of the fusion done using various wavelets. The MRI and CT images are then fused using the select maximum fusion rule, since studies have shown that select maximum rule provides the best result. The final fused image is examined using the various performance metrics to evaluate which wavelet gives the best result.

References


Index Terms

Computer Science  Image Processing

Keywords

Computed Tomography, Magnetic Resonance Imaging, Wavelet Transform, Haar Transform, Daubechies Transform, Symlet Transform, Image Fusion Vanishing Moments, Multiresolution Decomposition, Image Fusion, Quadrature Mirror Filter, Order, Filter Banks, Mean Squared Error, Peak Signal to Noise Ratio, Entropy