Abstract

This paper explores different medical image fusion methods and their comparison to find out which fusion method gives better results based on the performance parameters. Here medical images of magnetic resonance imaging (MRI) and computed tomography (CT) images are fused to form new image. This new fused image improves the information content for diagnosis. Fusing MRI and CT images provide more information to doctors and clinical treatment planning system. MRI provides better information on soft tissues whereas CT provides better information on denser tissues. Fusing these two images gives more information than single input image. In this paper, wavelet transform, principle component analysis (PCA) and Fuzzy Logic techniques are utilized for fusing these two images and results are compared. The fusion performance is evaluated on the basis of root mean square error (RMSE), peak signal to noise ratio (PSNR) and Entropy (H).

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**Index Terms**

Computer Science

Image Processing

**Keywords**

Medical image fusion  MRI image  CT scan image  Wavelet Transform  PCA

Transform

Fuzzy Logic

RMSE
PSNR