Abstract

Multiple modal medical image fusion is an essential method for medical imaging technologies. In these Multi-modal medical image fusion usually are Positron Emission Tomography (PET) and Single-photon Emission Computer Tomography (SPECT), Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) images are utilized. However, the conventional state-of-art-fusion-techniques consists of less redundant and less comprehensive information. Therefore, here, we present an image fusion technique to control non-linear uncertainties and provide stability based on IT2FLDS for multi-modal medical color images. The core idea is to perform fusion on color source images of either functional or structural type by extracting both large and small structural information which is rarely done in any other conventional state-of-art-techniques. This can be achieved with the help of IT2FLDS. The fuzzy membership functions based image fusion technique helps to combining low and high frequency components of multi-model medical color images. Experimental results proves the superiority of our proposed image fusion model in terms of visual and quantitative analysis like mutual information, standard deviation and Feature Point Similarity Measure.
References

8. A. James, B. Dasarathy, Medical image fusion: A survey of the state of the art, Information Fusion 19 (2014) 4-19. 1, 2

Index Terms
Computer Science
Image Processing
Keywords

Multi-modal; Magnetic Resonance Imaging; Image fusion; type-2 fuzzy logic