Abstract

This paper presents Grammatical Swarm based segmentation methodology for lesion detection in brain's magnetic resonance image. In the proposed methodology, images are denoised using median filter at the outset. Secondly, images are segmented using Grammatical Swarm based hard-clustering technique. Finally, lesions are extracted from the segmented images. The proposed methodology is applied on six Axial-T2 magnetic resonance images and compared with Particle Swarm Optimizer, K-Means and FCM based segmentation methods using quantitative performance measurement index. The experimental results show that the proposed methodology statistically outperforms other methods.
Grammatical Swarm based Segmentation Methodology for Lesion Segmentation in Brain MRI


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Index Terms
Keywords
Brain  Magnetic resonance image  Lesion  Segmentation  Clustering
Grammatical swarm
Particle swarm optimizer