Abstract

Brain Tumors are detected efficiently by using the Magnetic Resonance Imaging (MRI) techniques. The extracted MRI image is sensitive to noise which limits the visibility of certain characteristics of the image. This unwanted noise can be disintegrated and curtailed from the original Image by using the non linear digital median filter. The intensification is achieved by using the combination of discrete wavelet transform (DWT) and stationary wavelet transform (SWT) augmented with Bi-cubic interpolation algorithm. The quality of the resolute image is analyzed with the possible static parameters. Segmentation and clustering approaches are applied on the resultant sharpened high resolution image to estimate the tumor area. The results obtained with the proposed Optimized Hybrid Clustering (OHC) algorithm are compared with the existing K-Means, Pillar K-Means and Fuzzy C-means (FCM) approaches. The tumor sensitivity and accuracy of the test parameters with the OHC approach are estimated. In-order to deliver the drug to kill the aberrant tissue, the number of tumor cells is estimated against its radius.

**Index Terms**

Computer Science

Image Processing
Keywords
Denoise  DWT  SWT  Bi-cubic Interpolation  Segmentation  Tumor area