Abstract

The aim of this study is to present a Computer aided (CAD) system for assisting radiologists in multiclass classification of brain tumors. The diagnosis method consists of four stages pre-processing of MR images, feature extraction, feature reduction and classification. The features are extracted based on discrete wavelet transformation (DWT) using Haar wavele. In the second stage the features of Magnetic resonance images has been reduced using Principal Component analysis (PCA), without degrading the performance of system much. PCA helps in reducing the execution time for classification. In the last stage classification method, Support Vector Machine (SVM) for multi class data is employed. This work is the modification and extension of the previous studies on the diagnosis of brain diseases, to classify tumors in different classes on the basis of location in different parts of brain.

References

- Cancer mortality in India: a nationally representative survey
- S. Chaplot, L.M. Patnaik, N.R. Jagannathan, Classification of magnetic resonance brain images using wavelets as input to support vector machine and neural network, Biomed. Signal


Index Terms
Computer Science Image Processing

Keywords
Discrete wavelet transform (DWT) Magnetic resonance imaging (MRI) Principal Component Analysis (PCA)
Support vector machine (SVM)