Abstract

Presented work is a feature-extraction and classification study for Alzheimer’s disease (AD), Mild Cognitive Impaired (MCI) and Normal subjects. The proposed technique consists of three
stages, namely, normalization of 3D MRI, feature extraction, and classification. In the first stage, we have normalized 3D MR images using VBM analysis, spatially filtered and slice averaged in order to obtain 2D MR slice. In the second stage, obtained the features related to MRI images using discrete wavelet transformation (DWT) with mother wavelets Haar and Daubechies. In the classification stage, a classifier based on feed forward backpropagation artificial neural network (FP-ANN). Classification is obtained with accuracies of 74% and 67% using Daubechies wavelet and Haar wavelet respectively. Used subjects from the ADNI database.

Reference

- AmirEhsan Lashkari A Neural Network-Based Method for Brain Abnormality Detection in


**Index Terms**

Computer Science

Signal Processing

**Key words**

3D MRI

ANN

DWT Features

SPM

VBM