A Robust Brain MRI Classification with GLCM Features

Abstract

Automated and accurate classification of brain MRI is such important that leads us to present a new robust classification technique for analyzing magnetic response images. The proposed method consists of three stages, namely, feature extraction, dimensionality reduction, and classification. We use gray level co-occurrence matrix (GLCM) to extract features from brain MRI and for selecting the best features, PCA+LDA is implemented. The classifiers goal is to classify subjects as normal and abnormal brain MRI. A classification with a success of 100% for two normal and abnormal classes is obtained by the both classifiers based on artificial neural network (ANN) and k-nearest neighbor (k-NN). The proposed method leads to a robust and effective technique, which reduces the computational complexity, and the operational time compared with other recent works.

References
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- L. A. Zadeh, Fuzzy sets, Information and Control. 18(1965), 338-353.

Index Terms

Computer Science

Pattern Recognition

Keywords

Brain MRI  Feature extraction  GLCM  ANN  KNN