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Performance Impact of Texture Features on MRI Image Classification

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Abstract: The MR image texture contains a rich source of information which consists of entities that characterize brightness, color, slope, size and other characteristics. Features extraction are identifying relevant features leads to faster, easier, and better to understand images. Feature extraction process affects significantly the quality of the classification process. Accordingly, select representative features effect on classification accuracy. So, principle component analysis (PCA) used to reduce number of features. MRI classification is a computational method used to find patterns and develop classification schemes for data in very huge datasets. In this paper, we use two well-known algorithms neural network (NN) and support vector machine (SVM) for classification of MRI of the human brain. The extracted texture features passed to NN and SVM. The classifiers have been used to classify MRI as abnormal or normal. We use a large benchmark dataset of 710 MRI brain images obtained from Harvard medical school. The experimental results show that our approach achieved was 99.29 % classification accuracy achieved by NN and 97.32 % by SVM with cross-validation 10. And 99.58 % achieved by NN and 97.09 % SVM by with percentage split with 66%.