

## عنوان مقاله:

Optimization of Brain Tumor MR Image Classification Accuracy Using Optimal Threshold, PCA and Training ANFIS with Different Repetitions

## محل انتشار:

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## خلاصه مقاله:

Background: One of the leading causes of death is brain tumors. Accurate tumor classification leads to appropriate decision making and providing the most efficient treatment to the patients. This study aims to optimize brain tumor MR images classification accuracy using optimal threshold, PCA and training Adaptive Neuro Fuzzy Inference System (ANFIS) with different repetitions. Material and Methods: The procedure used in this study consists of five steps: (1) T<sub>1</sub>, T<sub>2</sub> weighted images collection, (2) tumor separation with different threshold levels, (3) feature extraction, (4) presence and absence of feature reduction applying principal component analysis (PCA) and (5) ANFIS classification with 10, 20 and 200 training repetitions. Results: ANFIS accuracy was 40%, 80% and 97% for all features and 97%, 98.5% and 100% for the 6 selected features by PCA in 10, 20 and 200 training repetitions, respectively. Conclusion: The findings of the present study demonstrated that accuracy can be raised up to 100% by using an optimized threshold method, PCA and increasing training repetitions.

## کلمات کلیدی:

MRI, Brain Tumor Detection, ANFIS, PCA, Training Repetition

لینک ثابت مقاله در پایگاه سیویلیکا:

