

Probabilistic Neural Network for brain tumor classification

Abstract

In this paper, Probabilistic Neural Network with image and data processing techniques was employed to implement an automated brain tumor classification. The conventional method for medical resonance brain images classification and tumors detection is by human inspection. Operator-assisted classification methods are impractical for large amounts of data and are also non-reproducible. Medical Resonance images contain a noise caused by operator performance which can lead to serious inaccuracies classification. The use of artificial intelligent techniques for instant, neural networks, and fuzzy logic shown great potential in this field. Hence, in this paper the Probabilistic Neural Network was applied for the purposes. Decision making was performed in two stages: feature extraction using the principal component analysis and the Probabilistic Neural Network (PNN). The performance of the PNN classifier was evaluated in terms of training performance and classification accuracies. Probabilistic Neural Network gives fast and accurate classification and is a promising tool for classification of the tumors.