Comparative Study of Intelligent Classification Techniques for Brain Magnetic Resonance Imaging

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Abstract

Brain tissue classification from Magnetic Resonance Imaging (MRI) is of great importance for research and clinical studies of the normal and diseased human brain. All MRI classification methods are sensitive to overlap in the tissue intensity distributions. Such overlaps are caused by inherent limitations of the image acquisition process, such as noise, intensity non-uniformity, and partial volume effect. Several approaches have been proposed to address this limitation of intensity-based classification. The objective of this paper is to make a comparative study on the recent published classification techniques for the brain magnetic resonance images (MRI). The contribution of this study is to determine the advantages and disadvantages of each technique and develop robust classification technique capable to perform an efficient and automated MRI normal/abnormal brain images classification.

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