

## An Improved C-Means Model for MRI Segmentation

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**Abstract :** Medical images are important to help identifying different diseases, for example, Magnetic resonance imaging (MRI) can be used to investigate the brain, spinal cord, bones, joints, breasts, blood vessels, and heart. Image segmentation, in medical image analysis, is usually the first step to find out some characteristics with similar color, intensity or texture so that the diagnosis could be further carried out based on these features. This paper introduces an improved C-means model to segment the MRI images. The model is based on information entropy to evaluate the segmentation results by achieving global optimization. Several contributions are significant. Firstly, Genetic Algorithm (GA) is used for achieving global optimization in this model where fuzzy C-means clustering algorithm (FCMA) is not capable of doing that. Secondly, the information entropy after segmentation is used for measuring the effectiveness of MRI image processing. Experimental results show the outperformance of the proposed model by comparing with traditional approaches.

**Keywords :** magnetic resonance image (MRI), c-means model, image segmentation, information entropy

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