

عنوان مقاله:

A Generalized Automatic Hybrid Fuzzy-Based GA-PSO Clustering Approach

محل انتشار:

مجله مهندسی برق مجلسی، دوره 8، شماره 3 (سال: 1393)

تعداد صفحات اصل مقاله: 7

نویسندگان:

Amir Hooshang Mazinan - *Department of Electrical Engineering, Islamic Azad University, South Tehran Branch, Tehran, Iran*

A. Amini - *Department of Electrical Engineering, Islamic Azad University, South Tehran Branch, Tehran, Iran*

Alireza Kabiriasl - *Department of Electrical Engineering, Islamic Azad University, South Tehran Branch, Tehran, Iran*

خلاصه مقاله:

The main contribution of the present research arises from developing the traditional methods in the area of segmentation of brain magnetic resonance imaging (MRI). Contemporary research is now developing techniques to solve the whole of considerable problems in this field, such as the fuzzy local information c-mean (FLICM) approach that incorporate the local spatial and the gray level information. It should be noted that the present approach is robust against noise, although the high computational complexity is not truly ignored. A novel approach in segmentation of brain MRI has been investigated and presented through the proposed research. Because of so many noises embedded in the acquiring procedure, like eddy currents, the segmentation of the brain MR is now tangibly taken into account as a difficult task. Fuzzy-based clustering algorithm is one of the solutions in the same way. But, it is so sensitive to change through noise and other imaging artifacts. The idea of combining the genetic algorithm (GA) and particle swarm optimization (PSO) for the purpose of generalizing the FLICM is the ultimate goal in the present investigation, since the computational complexity could actually be reduced. The experiments with a number of simulated images as well as the clinical MRI data illustrate that the proposed approach is applicable and effective

کلمات کلیدی:

Fuzzy-Based Clustering, en, Genetic Algorithm, PSO, FLICM

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1752388>

