

Fuzzy Distributed Genetic Approaches for Image Segmentation

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Abstract

This paper presents a new image segmentation algorithm (called FDGA-Seg) based on a combination of fuzzy logic, multiagent systems and genetic algorithms. We propose to use a fuzzy representation of the image site labels by introducing some imprecision in the gray tones values. The distributivity of FDGA-Seg comes from the fact that it is designed around a MultiAgent System (MAS) working with two different architectures based on the master-slave and island models. A rich set of experimental segmentation results given by FDGA-Seg is discussed and compared to the ICM results in the last section.

Keywords : image segmentation, fuzzy logic, Markov, random field, multiagent systems, genetic algorithms, chaotic system.

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