Testing Artificial Algorithm Efficiency in Image Segmentation

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In any man machine interaction system, a fast and accurate color classification is a challenging step, and the detection of color considered as the preliminary step in various recent applications such as object detection and recognition. Segmentation based color process should be robust, accurate, and feasible for specific application field. Image segmentation is the process of partitioning an image into multiple segments so as to change the representation of an image into something that is more meaningful and easier to analyze. The goal of image segmentation is to cluster image pixels into salient image regions, image segmentation applications range from filtering of noisy image, medical application, locate objects in satellite image. Several general purpose algorithms and techniques have been developed image segmentation.

The field of artificial intelligence, or AI, attempts to understand intelligent entities in the similar manner the intelligent humans think. AI currently encompasses a huge variety of subfields, from general-purpose areas such as perception and logical reasoning, to specific tasks such as playing chess, proving mathematical theorems, and diagnosing diseases, etc. AI includes various fields such as Neural Network (NN), Genetic Algorithm (GA), Fuzzy Logic (FL), and Natural Language Processing (NLP).

Fuzzy Logic System (FLS) can be defined as the nonlinear mapping of an input data set to a scalar output data, fuzzy logic is a widely used tool in image processing since it gives very efficient result.Fuzzy system models are capable of representing diverse, inexact, and inaccurate information. Fuzzy logic provides a method to formalize reasoning when dealing with

vague terms, every decision is either true or false. In this work, we designed and implemented an image segmentation technique using one of the artificial intelligence algorithms which is the Simple Fuzzy Logic System. The applied technique is easy to implement and the outcomes show the efficiency of the utilized method.