Abstract

This paper proposes color image segmentation approach and applying corresponding genetic algorithm under human vision limitations and capabilities. Most of the color image segmentation techniques initially use any clustering techniques to segment color images and then genetic algorithm (GA) is used only as optimization tool. Images are directly applied on 4D-color image histogram table using JND thresholds. The proposed algorithms are applied on Berkeley segmentation database in addition to general images. The segmentation performance of the proposed algorithms is estimated using Probabilistic Rand Index (PRI). The modified algorithm is proposed to improve the results and then compared with the proposed algorithm.

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**Index Terms**

Computer Science

Algorithms

**Keywords**

RGB Color Model, JND threshold, 4D-histogram, Genetic algorithms, PRI