An Evolutionary Approach to Color Image Quantization

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Abstract

In order to visualize true color images on graphic displays with reduced color resolution, a color quantization process is required. Since color quantization is an NP-hard optimization problem, several suboptimal heuristic approaches, with quite different objectives and results, have been proposed. In this paper we present a new hybrid approach in which an evolutionary algorithm is combined with a well-known local search heuristic. The superiority of the proposed approach to other strategies used in color quantization is demonstrated by presenting results for some test images.