A Multi Objective Optimization Approach For Contrast Enhancement Of Color Images

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Abstract

Contrast Enhancement is an important preprocessing step in the image processing field. There is an important compromise between contrast modification and noise addition when performing any Contrast Enhancement task. When it comes to color images, it is also of capital importance to take color information into account during the process. A Multi-Objective framework is proposed in order to address the enhancement problem for color images, in which the intensity values and color information are considered for optimization and automatic evaluation of resultant images. The results presented consist in a set of enhanced images, and these are compared with the results achieved by a state of the art single objective approach. Several types of images are tested using this approach, and the results obtained appear to be promising.

Keywords: Optimization, Contrast Enhancement, Color Spaces, MOPSO, CLAHE.

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