

Image Contrast Enhancement Using Gray-Level Grouping Based on the Just-Noticeable-Difference Model of the Human Visual System

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Abstract

In this paper, a gray-level grouping (GLG) approach exploiting the just-noticeable-difference (JND) model of the human visual system, denoted by JND-GLG, is proposed for image contrast enhancement. First, the JND model is employed to group similar gray values together in a deterministic way. Then, a group splitting method is further employed to improve the contrast among those histogram components occurred frequently. Experimental results on several low contrast images have shown that our proposed approach can produce more pleasing and appealing enhanced images than other methods.

Keyword : image contrast enhancement, gray-level grouping, just-noticeable-difference