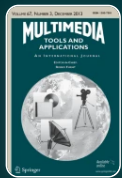


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# Adaptive power-law and cdf based geometric transformation for low contrast image enhancement

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## Abstract

Image enhancement is a technique that manipulates an image to make it more meaningful and effective to user specific problem. In most of the enhancement techniques, input image intensities are transformed into either higher order or lower order intensities according to the designed algorithmic characteristic. But, in certain cases the input intensities might require to be transformed in a balanced combination of both higher and lower order intensity. Moreover, 2D Geometric Transformation is mainly used to transform the objects presents in an image. Here a contemplative fusion of gamma and 2D Geometric Transformation concept has been used for intensity transformation. The proposed method first divides the histogram into three sub-sections according to the homogeneity value representing the dark, gray and bright section of histogram. Then each sub-section is transformed locally using adaptive gamma and 2D Geometric scaling transformation. These transformed sub-sections are merged again by employing 2D translation operation. On the other hand, a global gamma transformation is obtained for entire histogram. At last, the final transformation matrix is obtained by combining previously computed local and global transformation. The comparison of this technique with other state of art technique has been discussed to depict the significance of the proposed method. The proposed method gives a new and innovative dimension of image enhancement.