Abstract

It is proposed that a new image enhancement scheme using wavelet transform, smooth and sharp approximation of a piecewise non linear filter technique after converting the RGB (Red, Green, and Blue) values of each pixel of the original image to HSV (Hue, Saturation, and Value). Wavelet transform is then applied to the luminance value of V component, it decomposes the input image into the four sub-bands by using Discrete Wavelet Transform.
(DWT). The low frequency sub-band is smoothened and the high frequency sub-bands are sharpened by using non linear piecewise filter. The inverse DWT to the smoothened low frequency sub-band and sharpened high frequency sub-bands. 1-level decomposition is used in the proposed system. The saturation components are enhanced by histogram equalization; the H components are not changed, if it changes in the H components could cause the color balance between the HSV components. The enhanced S and V combined with H are converted back to RGB values. The method has effectively achieved a successful enhancement of color images. The experimental result vividly displays the proposed algorithm is efficient enough to remove the noise resulting good enhancement.

References


Index Terms

Computer Science  Image Processing
A Color Image Enhancement based on Discrete Wavelet Transform

**Keywords**