Abstract

The technique of embedding colour information in a greyscale image such that the original colour image can be reconstructed from this modified greyscale image has previously been proposed using the YCbCr colour space with the improvement using Kekre’s LUV colour space. The embedding of the colour information into the greyscale image leads to the formation of a slightly distorted greyscale image known as a “matted greyscale” image. This matted greyscale image is used to reconstruct the colour image. Such a technique can be used effectively for image compression as the matted greyscale image alone can be used to reconstruct the original colour image. Also the technique enables transmission of colour documents over black and white fax machine. This paper extends this technique to other colour spaces like Kekre’s YCgCb, YIQ and YUV, and employs the Haar transform. For the performance analysis of the technique is applied on 20 different images. The mean squared error (MSE) difference between
original grey and matted gray along with MSE difference in original colour and recoloured image play role of statistical performance measures. From the results the conclusions drawn are Kekre’s LUV colour space gives best recolouring and Kekre’s YCgCb colour space gives minimum distortion in matted grey image.

Reference

- Dr.H.B.Kekre, Sudeep D. Thepade, Akshay Maloo, “Performance Comparison of Image Retrieval Techniques using Wavelet Pyramids of Walsh, Haar and Kekre Transforms”,

Storage of Colour Information in a Greyscale Image using Haar Wavelets and Various Colour Spaces


**Index Terms**

Computer Science

Image Processing

**Key words**

Colouring

Colour to Grey

Matted

Greyscale

YCbCr

Kekre's LUV

Kekre's YCgCb

YIQ

YUV

Colour Spaces

Haar Wavelets