Color Image Reconstruction from Compressive Sensing Using Iteratively Reweighted Least Squares-l p-Minimization

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Abstract

Compressive sensing is a new technique in data acquisition that allows to reconstruct signal form far fewer samples than conventional method i.e. Shannon-Nyquist theorem use. In this paper, we reconstructed the color image from compressive measurement using Iteratively Reweighted Least Squares-l p-minimization algorithm. Compressive measurement was done by using random Gaussian matrix to encode the image that the first be divided into number of blocks to reduce the computational complexity and using two format color space those are RGB and YCbCr models. From the results, for objective measurement using PSNR parameter, YCbCr model provided better reconstruction quality than RGB model, but visually both of them provided almost the same results.

Keywords

Compressive sensing, Color image, Reconstruction, Iteratively Reweighted Least Squares-l p-minimization