

On a high performance image compression technique

ABSTRACT

We introduce an optimal approach to colour image compression using a new scan method. We propose efficient methods to increase the compression ratio for colour images by dividing the colour image into non-overlapping blocks and applying a different compression ratio for these blocks depending on the classification of blocks into edge and non-edge blocks. In an edge block (a region that contains important information) the compression ratio is reduced to prevent loss of information, while in a non-edge block (a smooth region which does not have important information), a high compression ratio is used. The new proposed scan is used instead of the zigzag scan. A particular implementation of this approach was tested, and its performance was quantified using the peak signal-to-noise ratio. Numerical results indicated general improvements in visual quality for colour image coding.

Keyword: JPEG; Zig-zag scan; DCT; Colour image.