IMAGE COMPRESSION USING GENETIC PROGRAMMING

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Abstract

The fast growth in digital image applications such as web sites, multimedia and even personal image archives encouraged researchers to develop advanced techniques to compress images. Many compression techniques where introduced whether reversible or not. Most of those techniques were based on statistical analysis of repetition or mathematical transforming to reduce the size of the image. This research is concerning in applying Genetic programing (GP) technique in image compression. In order to achieve that goal, a parametric study was carried out to determine the optimum combination of (GP) parameters to achieve maximum quality and compression ratio. For simplicity the study considered 256 level gray scale image. A special C++ software was developed to carry out all calculations, the compressed images was rendered using Microsoft Excel. Study results was compared with JPEG results as one of the most popular lossy compression techniques. It is concluded that using optimum (GP) parameters leads to acceptable quality (objectively and subjectively) corresponding to compression ratio ranged between 2.5 and 4.5

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