

Review of The Image Compression And Enhancement Techniques

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Abstract: The image processing is used in order to enhance the image. The image processing will reduce the noise from within the image. The noise will reduce the clarity of the image. There could be many reasons by which image are distorted. One of the reasons will be temperature. Image distortion will also occur when image is transferred from source to the destination. The bandwidth which is utilized during the transfer process could be high. The size of the image will be reduced using compression. One of the mechanisms which can be used for image compression is run length encoding. The run length encoding will replace the repeated string with the number and hence efficiently compress the image. Less bandwidth will be used in this case.

I. Introduction

The image compression is the mechanism by which size of the image is reduced. In order to enhance the image processing is used. The image compression and enhancement will go side by side. The image transfer process will take large amount of bandwidth. This bandwidth consumption has to be minimized. When image is compressed then same space can be used by other images on the disk drive. The image compression tools are available and are used using the simulator like MATLAB. There are number of mechanisms which can be used for the image compression. These are divided into two categories.

1. Lossy Compression
2. Lossless Compression

Lossy compression is the one in which there is a chance that some of the pixels might be lost during the process of encoding and decoding.

Lossless compression on the other hand ensures that the image will be compressed and decompressed without the loss of the pixels.

In the proposed paper analysis of lossless compression techniques is studied. Some of them are Huffman Encoding, Run Length Encoding etc. The encoding mechanism which is suggested will compress the image and also image dimensions are preserved after decryption.

II. Related Work

The work has been done toward the lossy as well as lossless compression techniques. All of these techniques are discussed in this paper. [1] this paper will include the mechanism of enhancing the color image patterns. The image which is enhanced will be based upon the discrete cosine transformations. The transformation process will be lossless in nature. [2] in this paper image compression will be used in order to reduce the size of the image. Block optimization and byte compression will be done within this paper. the compression technique which is used is lossless in nature. [3] Data compression is a common requirement for most of the computerized applications. There are number of data compression algorithms, which are dedicated to compress different data formats. Even for a single data type there are number of different compression algorithms, which use different approaches. This paper examines lossless data compression algorithms and compares their performance. A set of selected algorithms are examined and implemented to evaluate the performance in compressing text data. An experimental comparison of a number of different lossless data compression algorithms is presented in this paper. The article is concluded by stating which algorithm performs well for text data. [4] the image compression technique which is used in this paper is run length encoding technique. The image compression will be in the form of replacement of characters with the number indicating the number of occurrences of the characters. The stuffing is also used in this case in order to identify the beginning and ending of the bits of the image. [5] the image compression techniques are considered in this case. The various image compression techniques are lossless and lossy compression techniques. The techniques which are considered will efficiently compress and decompress the images. [6] the study of various lossless image compression techniques are presented in this case. The advantages and disadvantages of various image compression techniques are also presented in this case. [7] the run length encoding is considered in this case. The run length encoding will compress the image and then decompression mechanisms are used to decrypt the image. The image compression and decompression will not cause the image clarity to degrade. [8] the combination of arithmetic coding with the run length encoding will be used in this case. The run length

encoding will efficiently reduce the size of the image. The arithmetical coding will enhance the image by decompressing it preserving the pixels. Hence it is a efficient approach for saving space. The grayscale images are considered in this case.

III. Comparison Of Techniques

The techniques which are used in the existing papers are listed and describe through the tabular structure as follows

Sno	Paper	Year	Characteristics
1	A New Color Image Compression Based on Fractal and Discrete Cosine Transform	2014	1 Color Images are considered in this case 2 Discrete Cosine Transformation is followed in this case. 3 Lossless Image compression is followed in this case
2	An Efficient Image Compression Algorithm Based on Block Optimization and Byte Compression	2010	1 Block optimization is considered 2 Byte Compression is performed. 3 Lossless Image Compression is performed
3	Comparison of Lossless Data Compression Algorithms	2010	1 Lossless image compression is considered 2 Lossy Image compression is also considered
4	Efficient Lossless Colour Image Compression Using Run Length Encoding and Special Character Replacement	2011	1 Lossless Image compression is considered 2 Run Length encoding is considered 3 Special Character replacement is considered in this case
5	Data Compression Methodologies for Lossless Data and Comparison between Algorithms	2013	1 Lossless image compression strategies are considered 2 Comparison of various algorithms are presented.
6	Study Of Various Lossless Image Compression	2013	1 Lossless image compression strategies are considered 2 Comparison of various algorithms are presented.
7	An Enhanced Approach in Run Length Encoding Scheme (EARLE) Abstract : Image Compression :	2011	1 Run Length Encoding is considered 2 The image compression technique with stuffing is suggested
8	A New Method Which Combines Arithmetic Coding with RLE for Lossless Image Compression	2012	1 A combined approach using arithmetical coding and RLE is considered 2 Lossless compressions are considered.

From the above comparison it is clear that run length encoding is used but without redundancy removal mechanisms. In the papers we have studied the image compression is followed using Arithmetical encoding and RLE encoding. The pixel positions are preserved in this case.

IV. Conclusion And Future Work

In this paper a review of various techniques of image compression is followed. The image compression can be lossy as well as lossless in nature. The lossy techniques are considered in this case. The study of Run Length encoding is the prime objective of this paper. The run length encoding is simple of all the encoding schemes available to be used. The stuffing is used in order to identify the beginning and ending of the bits. In the future we will propose the redundancy handling mechanisms to reduce the length of the image further.

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