

High Level Synthesis on Lossless Compression Decoders for Bit Streams and Software Binaries

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ABSTRACT

We need to secured transmission and storage of digital images/information where all the digital images are compressed before the storage or transmit to save the bandwidth. In this process we have embedding digital signals or patterns into an object without affecting in any way the quality of original image. The process is called Watermarking. We have study various papers related to lossless image compression and compare of those papers.

Keywords : Image, Watermarking, Lossless Compression.

I. INTRODUCTION

Image compression method is useful through we can reduce the storage space and bandwidth. By this compression remove the unwanted data and reduce the extra information. It removes the redundancy of data where redundancy means duplicate data that increase the effectiveness of the object. Compression of image/data or file by using a compression method either lossless or lossy compression technique. Lossless compression technique are compressed the image without any loss of data, compressed image are similar to original image but in less bandwidth. Lossy compression technique is mostly used for image, audio, video it compressed the image like lossless but some data are lost in this method.

In recent times transmission and sharing of images are required but the securities are also must for sharing and storage of images . Digital images sharing and transmission are done over the unsecured channel. This type of sharing of images are required a high range of security, authenticity, reproducibility and copyright protection [1]. Image watermarking provide a protection for different applications like copyright protection, source tracking, broadcast monitoring,

video or audio authentication and content management on social networks, e-government systems.

II. LITERATURE SURVEY

In 2017 S.Haddad, G.Coatrieux, M.Cozzic, D.Bouslimi [2], This paper, joint an image watermarking and JPEG compression to track the compression rates, robustness and embedding alternates against different known signals attacks.

In 2017 Madhu , Sunil Dalal[3] , In this paper we present the concept of different compression technique and find which one is better for image processing . These papers compare the different techniques DWT, EZW, SPIHT . SPIHT give the low compression ratio and good peak single noise ratio.

In 2017 Lu ' is F. R. Lucas, Nuno M. M. Rodrigues, Luis A. da Silva Cruz and S 'ergio M. M. de Faria[4], This paper proposed a lossless compression algorithm for volumetric medical images such as CTs and MRIs. Paper proposed on 3D-MRP is based on principal of MRP algorithm. Compared various lossless compression algorithm based on MRP algorithm.

In 2016 Sadhana Singh, Preeti Pandey [5], In this paper used a lossless compression method i.e. LZW for compressed the image and show the ROI (region of interest) of the image.

In 2016 Hao Wu, Xiaoyan Sun[6], This paper proposed a lossless compression algorithm for reduced the size of storage space without any loss of information set of jpeg2000 coded. Method jointly remove the inter/intra image redundancy in the feature, spatial, and frequency domains.

In 2016 Walaa Z. Wahba, Ashraf Y. A. Maghari[7], In this paper examine the different compression techniques i.e. RLE, delta coding, Huffman coding for binary image, grey level image and RGB image.

In 2016 Chin-Chen Chang & Tzu-Chuen Lu & Gwoboa Horng & Ying-Hsuan Huang[8], In this paper we propose a novel compression method that can efficiently compress a vector quantization (VQ) index table. Huffman coding is used to encoding the vector quantization.

In 2015 Saif alZahir[11], paper proposed a lossless compression algorithm of discrete-color images such as map images, graphics, GIS as well as binary images. Image compressed by Huffman and arithmetic coding.

In 2014 V. Anusuya & V. Srinivasa Raghavan & G. Kavitha [9] , In this paper compressed the medical images by using lossless compression method each pixel are valuable of medical images . We compressed the 3D medical images by using SWT (Stationary wavelet transforms) .parallel compressed the decimated coefficient using embedding coding with optimized truncation of the embedded bit stream. Through inverse SWT decode the bits reams.

In 2014 Yongjian Nian , Mi He, Jianwei Wan[10], In this paper proposed a two efficient algorithm lossless and near-lossless compression of hyper spectral images based on distributed source code. That proposed algorithm provide a low complexity and different degree of error resilience, it suitable for onboard compression.

III. COMPARATIVE STUDY

S.N O	YEAR	AUTHOR NAME	ADVANTAGE	LIMITATION
1.	2017 [12]	Jian Yan, Junqi Yuan, Philip H. W. Leong	Lossless compressions are decoding for bits ream and software binaries, reduce the software startup time and also reduced the memory size.	Error checking and error reporting logic are not including
2.	2016 [5]	Sadhana Singh, Preeti Pandey	This paper proposed a LZW compression technique for compress medical image without any loss.	LZW method not compressed .dcm format of images.
3.	2016 [13]	Rachit Patel, Virendra Kuma, Vaibhav Tyagi, Vishal Asthana	This paper used a Huffman coding algorithm for compressed image are secured .	This algorithm not working with multioorder.

4.	2015 [14]	Hongda Shen, W. David Pan, and Yi Wang	This paper proposed a novel algorithm that provide a large compression than JPL` s low complexity hyper spectral image compression method. When ROI applied individual.	Efficient coding required of boundary pixel.
5.	2014 [9]	V. Anusuya & V. Srinivasa Raghavan & G. Kavitha	Increase the interest of telemedicine technologies, and provide great quality medical images.	By using parallel computing we can apply the algorithm for different type of medical images.
6.	2015 [11]	Saif alZahir	This paper proposed a lossless compression method for discrete color images and binary image.	This compression method best for mid-to-small size image not for large-size image.

IV. CONCLUSION

These papers present the study of various image compression techniques. Image compressions have a two type of techniques lossless and lossy method. Comparative study of various image compression techniques and it difficult unless the identical data sets and performance measures are used. For some applications that compression techniques are good and for some not good. For security purpose of image used watermarking , That provides a security form the signal attacks. After study about the all techniques of compression we found that lossless compressions are better over the lossy compression method. As compare to lossless, lossy provide a higher compression ratio.

V. REFERENCES

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