



## ENHANCED IMAGE COMPRESSION TECHNIQUE: REVIEW

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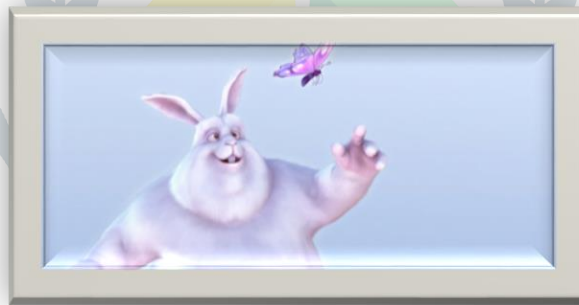
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**Abstract :** Two-dimensional computer graphics is the computer-based creation of digital images and graphics, typically from two-dimensional models including two-dimensional geometric models, text, and digital images and graphics and using techniques particular to them. Word may refer to a subfield of computer science that includes these methods or to the models themselves. Most applications that were built on traditional printing and drawing technologies, such technical drawing, advertising, typography, cartography, etc., require two-dimensional computer graphics.

**Keywords:** *Digital image, 2D, 3D, rotation, Scaling, Computer graphics, Matrix*

### I. INTRODUCTION

In the 1950s, vector graphics devices were used to create two-dimensional computer graphics. In the decades that followed, raster-based devices mainly replaced them. Two important advancements in the discipline were the PostScript language and the X Window system protocol.



**Fig 1** Computer generated color Image/Graphics

**Loosy & Lossless Image Compression** Lossy or lossless are two types of image compression technique. For archival purposes, lossless compression is recommended and is frequently used for comics, technical drawings, medical imaging, and clip art. Lossless compression techniques generate compression artefacts, especially when utilised at low bit rates. When a significant drop in bit rate is desired but a small (and perhaps undetectable) loss of fidelity is acceptable, lossy algorithms are particularly well suited for natural pictures like photography.

**Methods for lossless image compression are:**

- Run-length encoding –second hand in default modus in PCX & as one of probable in BMP, TGA, TIFF
- Area image compression
- DPCM & Predictive Coding
- Entropy encoding
- Adaptive dictionary algorithms such as LZW – used in GIF & TIFF
- Deflation – used in PNG, MNG, & TIFF
- Chain codes

### Image Scaling

Image scaling is the process of resizing a digital image in PC graphics. Scaling is a complex process that compromises efficiency, smoothness, and sharpness. In bitmap graphics, as an image's size is decreased or increased, the pixels that make up the image become more apparent, giving the impression that the image is "soft" if the pixels are averaged or jagged if not within vector graphics.

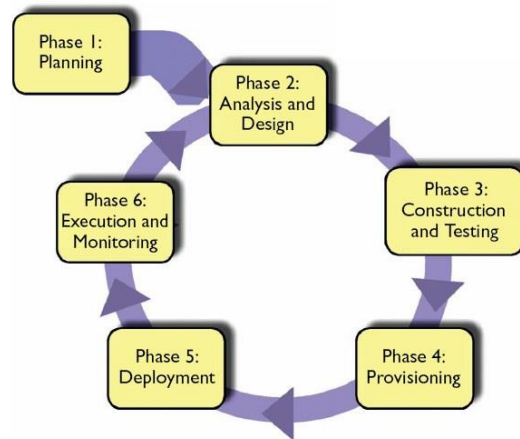


FIG: 2 scaling

## II. LITRETURE REVIEW

*A brief experience on journey through hardware developments for image processing & it's applications on Cryptography by Sangeet Saha,*

Within the current research era, the significance of embedded applications on the domains of communication, cryptography, and image and video processing has been taking up more area. There is a renewed focus on improving visual data for improved human perception, such as deblurring and de-noising in a variety of sectors like satellite imaging and medical imaging.

*Comparative Study & Implementation of Image Processing Techniques Using MATLAB by Sukhjinder Singh,*

The goal of picture enhancement is to raise the image's quality for easier visualisation. Three techniques for improving images—GHE, LHE, and DSIHE—that increase their visual worth are presented in this chapter. The quality of grey scale enhanced images is measured in this study using the implementation and evaluation of the aforementioned methodologies based on objective and subjective image quality metrics (such PSNR, NAE, SC, AE, & MOS).

*A Study on Image Edge Detection Using Gradients by Pinaki Pratim Acharjya,*

This paper presents a study on image edge/border detection using gradients. One of the most frequent processes in image processing and picture analysis is edge/border detection. Edges and borders define an object's outline and serve as a separation line between it and the background.

*Mie Sato et al., (2000) have experimented gradient magnitude based region growing algorithm for accurate segmentation.*

They claim that it is challenging to accurately determine boundaries because of an unfavourable partial-volume effect that occurs at the border between a high intensity region and a low intensity region. With the purpose of eliminating the negative impact on the boundary, a new segmentation strategy

## III. SCOPE OF RESEARCH

We have researched efficient ways to automatically organise, index, and retrieve image content. Lossless and Loose Picture Compression Techniques will be studied in this research together with other image compression methods. The best method for compressing images with the least amount of quality loss via networking is to create an algorithm based on Huffman Coding.

## REFERENCES

1. Dudgeon, D.E. & R.M. Mersereau, Multidimensional Digital Signal Processing. 1984, Englewood Cliffs, New Jersey: Prentice-Hall.
2. Castleman, K.R., Digital Image/graphic Processing. Second ed. 1996, Englewood Cliffs, New Jersey:
3. Oppenheim, A.V., A.S. Willsky, & I.T. Young, Systems & Signals. 1983, Englewood
4. Papolis, A., Systems & Transforms within Applications in Optics. 1968, New York:
5. Russ, J.C., Image/graphic Processing Handbook. Second ed. 1995, Boca Raton, Florida: CRC
6. Giardina, C.R. & E.R. Dougherty, Morphological Methods in Image/graphic & Signal Processing. 1988, Englewood Cliffs, New Jersey: Prentice-Hall. 321.
7. Gonzalez, R.C. & R.E. Woods, Digital Image/graphic Processing. 1992, Reading, Massachusetts:
8. Goodman, J.W., Introduction to Fourier Optics. McGraw-Hill Physical & Quantum Electronics Series. 1968, New York: McGraw-Hill. 287.
9. Heijmans, H.J.A.M., Morphological Image/graphic Operators. Advances in Electronics & Electron Physics. 1994, Boston: Academic Press.
10. Hunt, R.W.G., Reproduction of Colour in Photography, Printing & Television,. Fourth ed. 1987, Tolworth, England: Fountain Press.
11. Freeman, H., Boundary encoding & processing, in Picture Processing & Psychopictorics, B.S. Lipkin & A. Rosenfeld, Editors. 1970, Academic Press: New York. p. 241-266.
12. Stockham, T.G., Image/graphic Processing in Context of a Visual Model. Proc. IEEE, 1972. 60:
13. Murch, G.M., Visual & Auditory Perception. 1973, New York: Bobbs-Merrill Company,
14. Frisby, J.P., Seeing: Illusion, Brain & Mind. 1980, Oxford, England: Oxford University
15. Blakemore, C. & F.W.C. Campbell, On existence of neurons in human visual system selectively sensitive to orientation & size of retinal image/graphics. J. Physiology, 1969.