

# An Extended Visual Cryptography without Pixel Expansion for Halftone Images

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**Abstract**— Visual cryptography could be a method within which use of image distributed as shares specified, once the shares are overlapped, a hidden secret image is unconcealed. In extended visual cryptography, the share pictures are made to contain purposeful pictures, so providing opportunities for integration visual cryptography and security techniques. During this paper, we have a tendency to propose a technique for process halftone pictures that improves the standard of the share pictures and therefore recovered secret image victimization. An extended visual cryptography theme possess the dimensions of the share pictures and therefore the recovered image is that the same as for the first halftone secret image. The ensuing theme maintains the proper security of the first visual cryptography.

**Index Terms**— Cryptography, Image Processing, Secret Sharing

## I. INTRODUCTION

Visual cryptography (VC) may be secret sharing scheme that relies upon black and white or binary images. Secret image are divided into share images. [1]. the planning of robust techniques for the protection of multimedia documents. Cryptography providing a certain degree of security, whereas lot of recently digital watermarking. [2]. Technology that utilize human's own vision system to reveal the secret data. Purpose to safeguard the secret data which contains writings, numbers, symbols and images. [3]. Visual Cryptography (VC) scheme is used to encode a secret image into more shares, each which does not provide any information of the secret image [4]. By doing so the half toning process timing is reduced [5].

In this Paper we have a tendency to use Floyd algorithmic rule follow by AN Exclusive-OR (XOR) bitwise code to encrypt the property of image and store the information in assortment of shares. Shares And halftone pictures as an coding that cannot be cracked properly since the coding key and decoding are victimization completely different key. XOR decoding is additionally utilized in applying the bitwise XOR operator to each character.

The paper has been structured as follows:

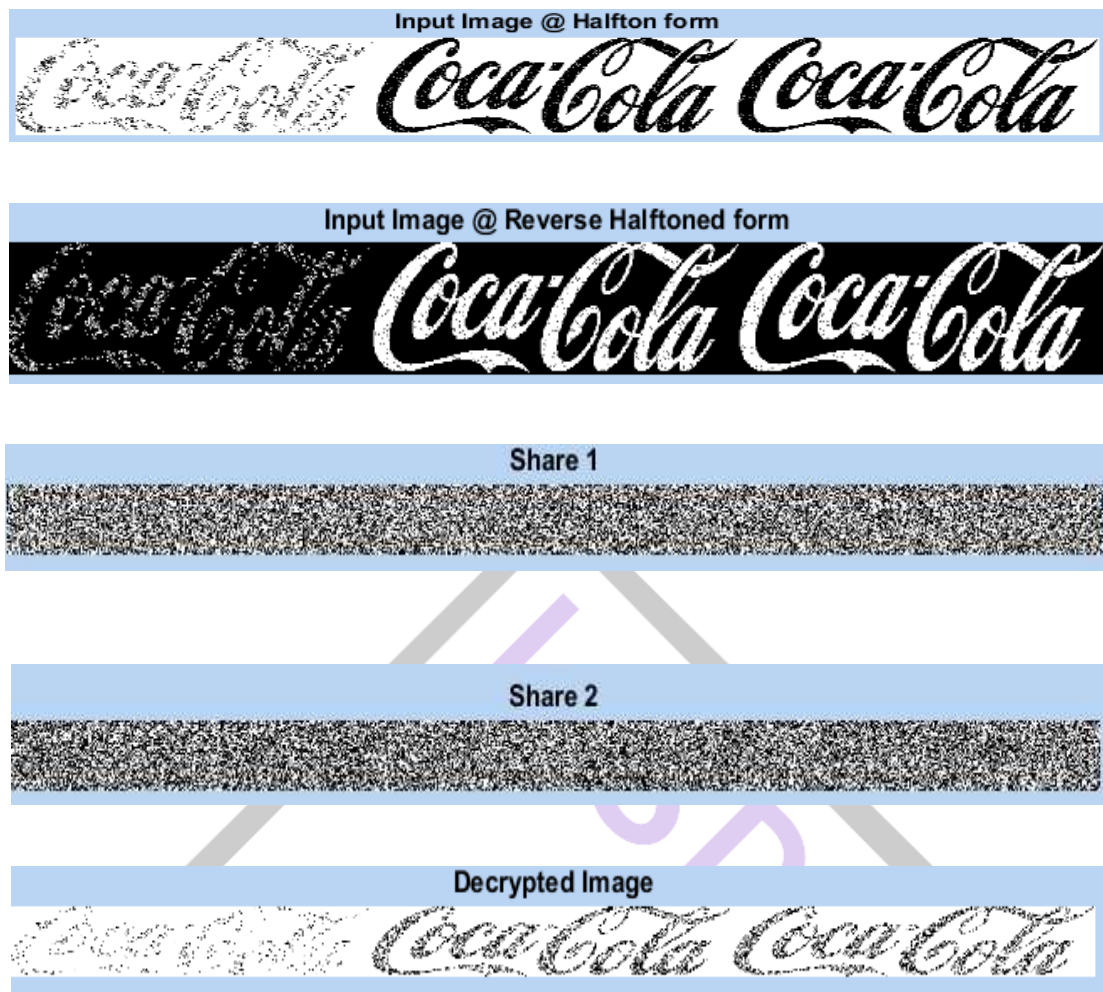
An introduction to Cryptography and a detailed description of the algorithm is provided in section 2. Details the security level of the encryption in section 3. The final section provides the results of the conducted research.

## II. PROPOSED METHOD

Visual cryptography Scheme is used to send the secret image by encrypting with TiOISSS. Two in One Image Secret Sharing Scheme (TiOISSS) is used which provide two decoding phases. The quality of reconstructed image is improved through first decoding stage followed by second stage. It is efficient while comparing to half tone technique. Secret image can't be read without decrypting with original key used for encryption.

## III. ENCRYPTION/DECRYPTION





### **ENCRYPTION**

The Encryption of image is done using Floyd algorithm which reads the input image and converts it into halftone image and reversed half tone image.

The plain text is encrypted which image is converted into black and white halftone images which is in built in MATLAB. Floyd algorithm is used for most efficiency.

The Halftone image is converted into reversed halftone image in which black and white pixels are converted vice versa. These generates shares in which color quality information of images are divided and encrypted to perform necessary encryption Secure encryption of image processing is performed to achieve high confidentiality of given properties of image and avoiding of Intruders. Using binary operation the pixel dimensions, size, resolution, color, file type image is encrypted

### **READ**

Take the image from the source to read image which satisfy pixel, density properties so as the required encryption and decryption of image is performed. It depends on the contents of the image.

### **DECRYPTION**

An Authorized user can read the correct information of the image and can decrypt the Data. Decryption of Image is done by over lapping of shares. Shares can one or two which is in hidden form of data, shares that are represented as S1, S2.

On performing XOR, XAND operations to shares give.

$S1 \oplus S2 \rightarrow$ Decrypted image

This gives the information of decrypted image

#### IV. SECURITY LEVEL

The security level of the image depends upon the standard and content in the image. In this Algorithm provides safe encryption in which only user can access for better performance .Shares that are generated provide hiding of information of the image so strangers cannot detect the information .in this paper the process is simple for user and more efficient compared to previous one. The shares that are generated cannot provide the information about image. Only through XOR and XAND operations decryption of image is done.

#### V. CONCLUSION

In this paper we use Floyd algorithm for encryption of image which is converted to halftone image and from that we can generate reversed halftone image .Using Image processing the images are changed into shares to hide information of the image [Encryption]. On overlapping of images gives the required decrypted image.

#### REFERENCES

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