"REVIEW ON A SECURE IMAGE TRANSMISSION TECHNIQUE VIA SECRET-FRAGMENT-VISIBLE MOSAIC IMAGES"

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Abstract - *A new secure image transmission technique is proposed, which transforms automatically a given large-volume secret image into a so-called secret-fragment-visible mosaic image of the different size. The mosaic image, which looks similar to be an arbitrarily selected target image and may be used as a camouflage of the secret image, will be yielded by dividing the secret image into fragments and transforming their color characteristics to be those of the corresponding blocks of the target image. Skilful techniques are proposed to be design to conduct the color transformation process so that the secret image may be recovered nearly losslessly. The information required for recovering the secret image is proposed to be embedded into the created mosaic image by a lossless data hiding scheme using a key. Steganalysis of the stego image is also proposed to recover the original image back.*

Key Words: *Color transformation, data hiding, image Encryption, mosaic image, secure image transmission.*

1.INTRODUCTION

Images from different sources are utilized and transmitted through the internet for different applications**,** for example online personal photograph albums, confidential enterprise archives, restorative imaging framework, military pictures databases. These images generally contain private or confidential data so that they should be protected from leakages during transmissions. Encryption of image is a method that makes use of the characteristic property of an image, like high redundancy and strong spatial correlation, to get an encrypted image. The encrypted image is a useless image so that anyone cannot obtain the secret image from it unless he/she has the correct key. However, the encrypted image is a useless document, which cannot give extra data before decryption and may arouse and an assaulter's attention during transmission due to its changeableness in form. An alternative method is use to avoid this problem is data hiding that hides a secret data into a cover image so that no one can realize the actual secret data. Actual data hiding methods mainly apply the techniques of, difference expansion, recursive, discrete cosine/wavelet transformations, LSB substitution, prediction-error expansion histogram modification, and histogram shifting.

2. PROCESS

A new method for secure image transmission is proposed, which transforms a secret image into a useful mosaic image with the different size and looking like a preselected target image. The transformation process is conduct by a secret key, and only with the key can a person recapture the secret image nearly losslessly from the mosaic image. The mosaic image is the result of rearrangement of the fragments of a secret image in beared of another image called the target image preselected from a database. Using their method, the user is not allowed to select freely his/her favorite image for use as the target image. It is therefore desire in this study to remove this lack of the method while keeping its merit, that is, it is aim to design a new method that can transform a secret image into a secret fragment- visible mosaic image of the different size that has the visual appearance of any freely selected target image without the need of a database. Specifically, after a target image is selected arbitrarily, the given secret image is required to be first divided into rectangular fragments called tile images, then this tile image fit into similar blocks in the target image, called target

blocks, according to a similarity generation based on color variations. After that, the color characteristic of each tile image is transformed to that of the corresponding target block in the target image, result in a mosaic image which looks like the target image. Applicable schemes are also proposed to conduct lossless receate of the original secret image from the resulting mosaic image. The proposed method is new in that a significant mosaic image is created, in opposite with the image encryption method that only creates relevant noise images. Also, the proposed method can transform a secret image into a beard mosaic image without compression.

3.PROPOSED SYSTEM

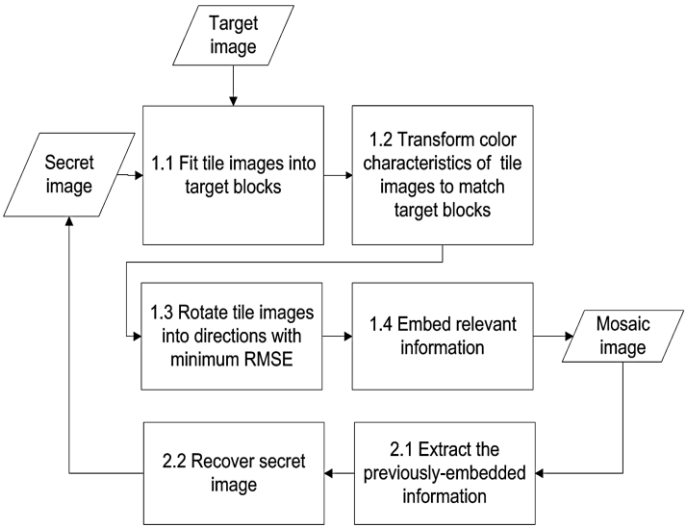

Fig -1: Block diagram of proposed system

The proposed method includes two main aspect as shown by the flow diagram -1) mosaic image creation 2) secret image recovery. In the first aspect, a mosaic image is produce, which consists of the fragments of an input secret image with color corrections according to a similarity generation based on color variations. The aspect includes four stages: 1) fitting the tile images of the secret image into the target blocks of a preselected target image; 2) transforming the color characteristic of each tile image in the secret image to become that of the equivalent target block in the target image; 3) rotating each tile image into a direction with the minimum RMSE value with respect to its equivalent target block; and 4) embedding significant information into the created mosaic image for future recovery of the secret image. In the second aspect, the embedded information is extracted to recover nearly losslessly the secret image from the generated mosaic image. The aspect includes two stages: 1) extracting the embedded information for secret image recovery from the mosaic image, and 2) recovering the secret image using the extracted information.

4. CONCLUSIONS

A new secure image transmission method has been proposed, which not only can create useful mosaic images but also can transform a secret image into a mosaic one with the different data size for use as a cover up of the secret image. By the use of proper pixel color transformations as well as a accomplished scheme. Also, the original secret images can be recovered nearly losslessly from the created mosaic images.

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BIOGRAPHIES

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