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A New Secure Image Transmission Technique via Secret-Fragment Visible Mosaic Images by Nearly Reversible Color Transformations

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ABSTRACT

A new secure image transmission technique is proposed which transforms automatically a given large-volume of secret image into a so-called secret-fragment-visible mosaic image of the same size. The mosaic image, which looks similar to an arbitrarily selected target image and may be used as a camouflage of the secret image, is yielded by dividing the secret image into fragments and transforming their color characteristics to be those of the target image. Skillful techniques are designed to conduct the color transformation process so that the secret image may be recovered nearly lossless.

Keywords: Transmission technique, image, color transformation, mosaic image

I. INTRODUCTION

The proposed method converts images provided by the user into the mosaic images. Commercial image editing applications also provide a similar function. However, .these applications often trade results for low-cost computing. It is desirable to create high quality images even if the computational cost is increased. We introduce a general energy based framework for mosaicing problems that extends some of the existing algorithms such as Photomosaics and Simulated Decorative Mosaics. We demonstrate the use of our method by applying it to a wide range of container images and tiles.

II. EXISTING METHOD

In this existing method, the LSB technique is used for data hiding process. In computing, the least significant bit (LSB) is the bit position in a binary integer giving the units value, that is, determining whether the number is even or odd.

Disadvantages:

It is more predictable and hence less secure, since there is an obvious statistical difference between the modified and unmodified part of the stego-image.

Also, as soon as we go from LSB to MSB for selection of bit-planes for message embedding, the distortion in stego-image is likely to increase exponentially, so it becomes impossible to use higher bit-planes for embedding without any further processing.

III. PROPOSED SYSTEM

In this proposed method, the tile image and the mosaic image plays a vital role in the data hiding process. The input image which is undertaken for the process is the target image. At first, a mosaic image is yielded which consists of fragments of an input

secret image with color corrections according to a similarity criterion based on color variations. The data hiding and the recover consist of two major steps.

The first category includes four main steps: Fitting the tile images of secret image into target blocks of a preselected target image.Then transforming the color characteristic of each tile image in the secret image. Next rotating each tile image into a direction with the minimum RMSE value with respect to its corresponding target block. Then embedding relevant information into the created mosaic image for future recovery of the secret image.

The second category includes two steps: Extracting the embedded information for secret image recovery from the mosaic image. Then recovering the secret image using the extracted information.

Advantages:

1) Compared with the existing system, this method is processed with a large number of data embedded into the image.
2) The noise level of the output is also reduced, so that the accuracy of the output is gradually increased.

A. ARCHITECTURE DIAGRAM

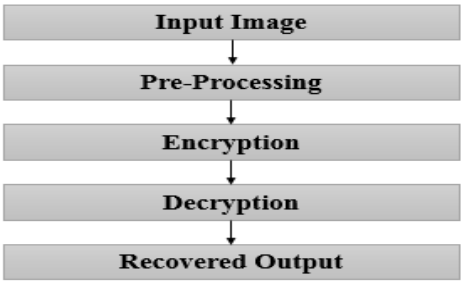

Figure 1. Architectural diagram

B. BLOCK DIAGRAM

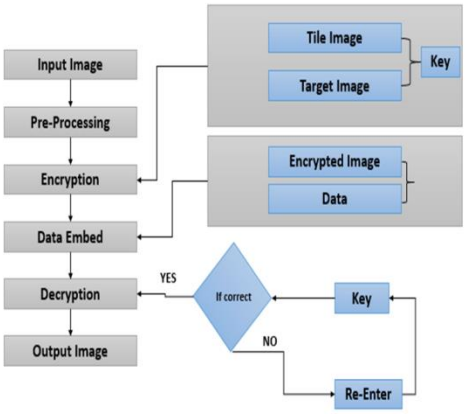

Figure 2. Block Diagram

IV. LITERATURE SURVEY

Title: Reversible Data Embedding Using a Difference Expansion (2003)
Author: Jun Tian
Title: Reversible Data Hiding (2006)
Author: Mehmet U. Celik, Gaurav Sharma, A. Murat Tekapl, eli Saber
3. Title: Reversible Image Watermarking using Adaptive Prediction Error Expansion and Pixel Selection (2008)
Author: Pramod R Sonawane, K.B Chaudhari
4. Title: Secure Reversible Data Hiding in Encrypted Images by Allocating Memory before Encryption via Security keys (2008)
Author: Priya Kumar Jambhulkar
5. Title: Expansion Embedding Techniques for Reversible Watermarking (2007)
Author: Diljith M. Thodi and Jeffrey J. Rodriguez

V. CONCLUSION

In this paper, we presented our experience of porting mosaic algorithm on to cuda architecture. This paper design a method to compute the data bits parallel using the threads respectively based on cuda. This is in order to realize performance improvements which lead to optimized results. This paper has analyzed majority of algorithms related to public key algorithms and then designed and made an

implementation of a public key algorithm mosaic in cuda.

VI. REFERENCES

[1] Zhao, Gaochang, et al. "MOSAIC – based digital image encryption algorithm in wireless sensor networks. "Signal Processing Systems (ICSPS), 2010 2nd International Conference on Vol. 2. IEEE, 2010.

[2] Chang, Chin-Chen, Min-Shian Hwang and Tung-Shou Chen. "A new encryption algorithm for image cryptosystems." Journal of Systems and Software 58.2 (2001): 83-91.

[3] Manavski, Svetlin A. " CUDA compatible GPU as an efficient hardware accelerator for AES cryptography." Signal Processing and Communications, 2007, IEEE International Conference,2007.

[4] Nickolls, Jhon, et al. "Scalable parallel programming with CUDA." Queue 6.2 (2008): 40-53.

[5] Ryoo, Shane, et al. "Optimization principles and application performance evaluation of a multithreaded GPU using CUDA." Proceedings of the 13th ACM SIGPLAN Symposium on principles and practice of parallel programming ACM, 2008.