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Different Text to Image Encryption Techniques: A Survey

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Abstract- This paper focuses mainly on the different kinds of text to image encryption and decryption techniques. With the progress in data exchange by electronic system, the need of information security has become a necessity. Due to growth of multimedia application, security becomes an important issue of communication and storage of images. There are various techniques which are discovered from time to time to encrypt the text and to make text more secure. In this paper a Survey of different Encryption Techniques that are existing is given. It additionally focuses on the functionality of new technique to encrypt the text by using various algorithms and converted to Image.
Keywords- Text Encryption, Text Decryption, Image Encryption, Image Decryption.

I. INTRODUCTION

The text encryption is to transmit the text securely over the network so that no unauthorized user can able to decrypt the text easily. Image encryption, video encryption, chaos based encryption have applications in many fields including the internet communication, transmission, medical imaging .Tele-medicine and military Communication, etc. The evolution of encryption is moving towards a future of endless possibilities. The image data have special properties such as bulk capability, high redundancy and high correlation among the pixels. Encryption techniques are very useful tools to protect secret information. Encryption will be defined as the conversion of plain message into a form called a cipher text that cannot be read by any people without decrypting the encrypted text. Decryption is the reverse process of encryption which is the process of converting the encrypted text into its original plain text, so that it can be read. Encryption of data [1] has become an important way to protect data resources especially on the internet, intranets and extranets. Encryption is the process of applying special mathematical algorithms and keys to transform digital data into cipher code before they are transmitted and decryption involves the application of mathematical algorithms and keys to get back the original data from cipher code. The main goal of security management is to provide authentication of users, integrity, accuracy and safety of data resources.

II. LITERATURE SURVEY

A. Modified AES Based Algorithm for Image encryption

Zeghid, M.Machhout, L.Khriji, A. Baganne, and R. Tourki [2] analyze the Advanced Encryption Standard (AES), and in their image encryption technique they add a key stream generator (W7,A5/1) to AES for ensuring the encryption performance.

B. Novel Text To Image Encryption Technique Using By AES Rejindael Algorithm With Color Code Conversion

Shanthi, Dr. V.Palanswami [9] introduced an encryption technique in which a given text is converted into an image by using AES Rejindael algorithm.

C. An Image Encryption Approach Using a Combination Of Permutation Technique Followed By Encryption

Mohammad Ali Bani Younes and Aman Jantan [3] give a new technique based on the combination of image permutation and a well known encryption algorithm called RijnDael. The original image was divided into 4 pixels × 4 pixels blocks, which were rearranged into a permuted image using a permutation process, and then the generated image was encrypted using the RijnDael algorithm.

D. Novel Image Encryption Algorithm Based On Hash Function

Seyed Mohammad Seyedzade, Reza Ebrahimi Atani and Sattar Mirzakuchaki [4] introuced an algorithm based on SHA-512 hash function, which was novel algorithm. It described into two sections. Firstly does pre-processing operation to shuffle one half of image then hash function to generate a random number mask. The mask is then XORed with the other part of the image which is

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going to be encrypted.

E. New modified version Of Advance Encryption Standard Based Algorithm For Image Encryption

Kamali S.H., Shakerian R.,Hedayati M. and Rahmani M.[5] presented a modification to the Advanced Encryption Standard (MAES) to provide a high level security and better image encryption. The result shown by them was higher than that of original AES encryption algorithm.

F. Permutation based Image Encryption Technique

Sesha Pallavi Indrakanti and P.S.Avadhani[6] introduced an algorithm on the basis of random pixel permutation with the motivation to maintain the quality of the image. It had three phases in the process of encryption. The phase one was the image encryption. The phase two was the key generation phase. And the phase three was the identification process. This provide confidentiality to colour image with less computations.

G. A Novel Network Security Algorithm Based On Private Key Encryption

Ahmad Abusukhon, Mohammad Talib and Maher A. Nabulsi in their paper, have shown the efficiency of the text to image encryption algorithm analyses. Abusukhon and Talib [7] proposed a novel data encryption algorithm called Text-to-Image Encryption algorithm (TTIE) in which a given text is encrypted into an image.

H. Analysing the Efficiency Of Text To Image Encryption Algorithm

Ahmad Abusukhon, Mohammad Talib and Maher A. Nabulsi [8] have shown the efficiency of the text to image encryption algorithm analyses. Abusukhon and Talib proposed a novel data encryption algorithm called Text-to-Image Encryption algorithm (TTIE) in which a given text is encrypted into an image. Each letter from the plain text is encrypted to one pixel.

I. an Enhanced Text to Image Encryption Technique using RGB Substitution and AES

Sourabh Singh and Anurag Jain [10], proposed a technique in which image is encrypted by a key using an AES algorithm, which generates an encrypted image.

This encrypted image, one more pixel is added, which stores the value of combination number that was used to transform text into the image. Now the key which was used in AES algorithm is transformed to its equivalent RGB resultant value.

III. RESULT CONCLUSION

This internet world nowadays, the security of data is very important. In this paper I have surveyed different text encryption techniques and decryption techniques in the span of years .The security for the digital data has become highly important since the communication by transmitting of digital products over the open network occur very frequently .Those encryption techniques are studied and analyzed well to promote the performance of the encryption methods also to ensure the security proceedings. To sum up, all the techniques are useful for real-time encryption. Each technique is unique in its own way, which might be suitable for different applications. Everyday new encryption technique is evolving hence fast and secure conventional encryption techniques will always work out with high rate of security. Newly proposed data encryption techniques and also enhance the security level by introducing more than one encryption algorithms.

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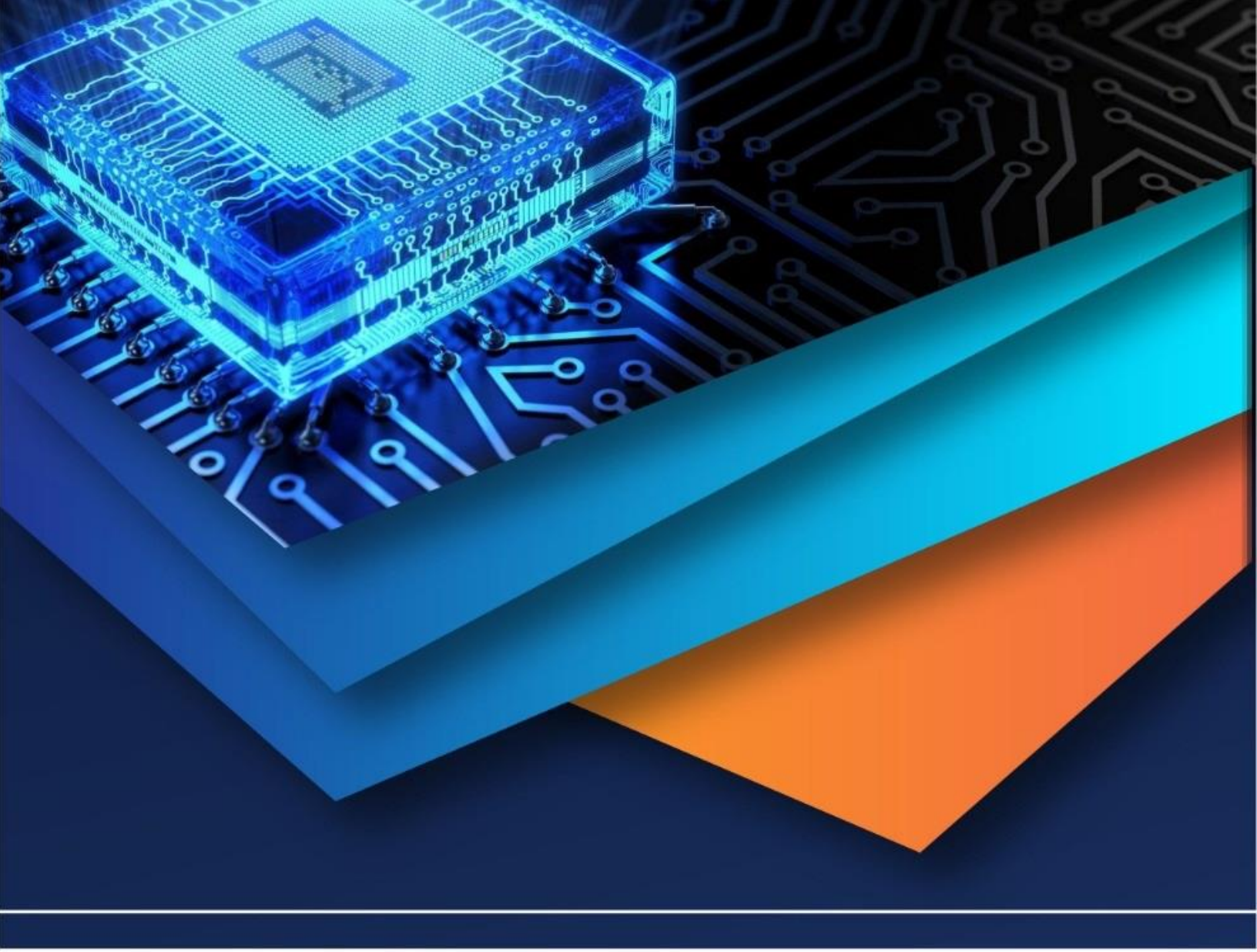

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