

Robust Image Authentication Using Stochastic Diffusion with Anonymity Session Protocol

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Abstract-Security of data is major point of concern in our day-to-day transfer of information. Data could be anything image data, stream data so in order to improvise security of data have studied different type of cryptography algorithm here our major area of data is image security because now a day's image transfer is more confidential thing, which includes medical imaging, space analysis images. So here can increase security of image sharing using image to text conversion technique for secure transmission. To improve the confidentiality, propose an image cryptosystem adopting a quantum chaotic map and the certain security-enhanced mechanisms. Firstly, use the good random characteristics of quantum chaotic sequences to enhance security performance. Then, introduce a plaintext correlation mechanism and a diffusion-permutation-diffusion structure in the cryptosystem. Finally, verify the cryptosystem on a common secure communication platform. The theoretical and statistical analysis results demonstrate that the cryptosystem has excellent performance and can resist various cryptographic attacks. Moreover, feasibility and effectiveness of the image cryptosystem are verified on the Internet of Things secure communication experimental platform. It proves that the proposed image cryptosystem is a preferred and promising secure communication technology solution.

Keywords- Add Authorized User, Image Encryption&Decryption, Connect User Communication, Share Image Files, Receive Original Image.

1. INTRODUCTION

Digital image processing is the use of computer algorithms to perform image processing on digital images. As a subcategory or field of digital signal processing, digital image processing has many advantages over analog image processing. It allows a much wider range of algorithms to be applied to the input data and can avoid problems such as the build-up of noise and signal distortion during processing. Since images are defined over two dimensions (perhaps more) digital image processing may be modeled in the form of multidimensional systems.

Modern digital technology has made it possible to manipulate multi-dimensional signals with systems that range from simple digital circuits to advanced parallel computers.

2.LITERATURE SURVEY

This work proposes a novel reversible data hiding scheme for encrypted image. After encrypting the entire data of an uncompressed image by a stream cipher, the additional data can be embedded into the image by modifying a small proportion of encrypted data. With an encrypted image containing additional data, one may firstly decrypt it using the encryption key, and the decrypted version is similar to the original image. According to the data-hiding key, with the aid of spatial correlation in natural image, the embedded data can be successfully extracted and the original image can be perfectly recovered. The proposed system's goal set is to

analyze the real world and reflect all relevant-and only relevant-information live in an integrated virtual counterpart for visualization. It covers geo-referenced person tracking and activity recognition (falling person detection). A prototype system installed in a home for assisted living has been running 24/7 for several months now and shows quite promising performance.

3. EXISTING SYSTEM

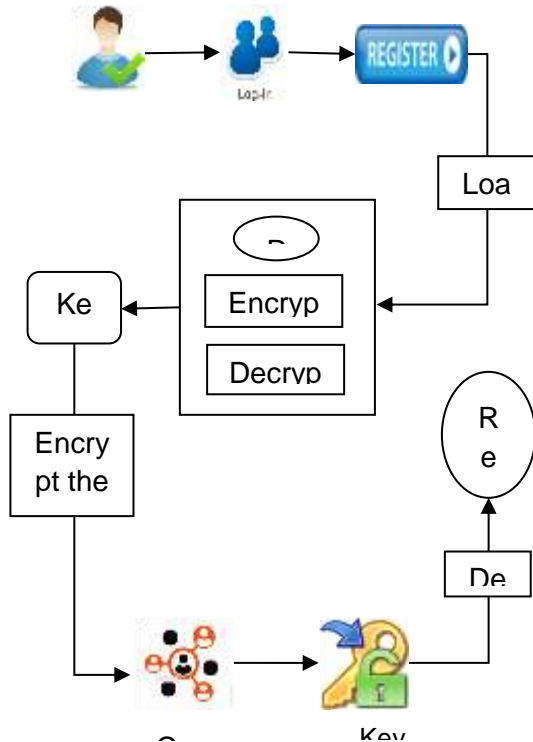
A generalized integer transform based reversible watermarking scheme is adapted and extended for reversible data hiding in the encrypted image. Burrow's-wheeler transform and exclusive-OR operator are adopted to encrypt the host image, and the encrypted image produced is smoother and has more low-variance regions for data embedding. The encrypted image produced should not have uniform distribution in its grayscale histogram and pixels should be correlated.

4. PROPOSED SYSTEM

In the proposed approach, reversible image data hiding scheme is developed considering the above disadvantages of the existing methods. To make the image secure from various attacks the image must be encrypted. So has to make a strong encryption for a image so that it can't be hacked easily. And the perfection in the original image can obtain after decrypting it. RSA is an algorithm which is use provide the encryption and authentication system In such a cryptosystem, the encryption key is a public one and the

decryption key is differ which is keep secret. In RSA, this asymmetry is based on the product of two large prime numbers, the factoring problem. The RSA encrypt key is encrypt the image, so that it convert into cipher text format and it will be store as a text file.

5.SYSTEM DESIGN



6.SYSTEM TESTING

Testing is a Set Activity that can be planned and conducted systematically. Testing begins, at the module level and work towards the integration of entire computers based system.

The most common types of testing involved in the development process are:

- Unit Test
- System test
- Integration Test
- Functional Test
- White Box Test
- Black Box Test

7.CONCLUSION

This scheme can be used in various scenarios like military, medical data sharing, authentication and many more. A powerful stream cipher algorithm RSA is used to encrypt and decrypt the images, which forms the encrypted domain. To overcome a public key modulation mechanism is used to embed the data without accessing the secret encryption key. The proposed system providing embedding capacity of 64 characters that is 512 binary bits. A dynamism histogram shifting is used to improve capacity and fidelity of the image. The experimental results have shown that the contrast image can be enhanced by increasing PSNR value. Moreover, the original image can be exactly recovered without any additional degradation. Thus, we can say that the proposed algorithm has made the image contrast enhancement reversible. Improving the algorithm robustness, and can be used in the medical and satellite images with the better visibility.

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