IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.53
Volume 4, Issue 5, May 2024

The Art of Digital Disguise: Image Cryptography and Steganography

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Abstract: *Securing data through encryption and decryption is vital in today's digital landscape. However, recent advancements in steganalysis have posed challenges to the security of personal content, messages, and digital images concealed using steganography. The emergence of stego analysis techniques has made it easier to detect hidden information within carrier files. To address these challenges, this project proposes a novel approach that combines steganographic and cryptographic methods for secure communication between two private parties. In the realm of cryptography, the RSA algorithm is employed for encryption and decryption. Meanwhile, image steganography is utilized to conceal the encrypted data within images. Additionally, a mutual authentication process is integrated to fulfill the essential services of cryptography, including access control, confidentiality, integrity, and authentication. This comprehensive approach ensures robust security measures for data transmission and storage. By leveraging RSA encryption followed by image steganography, unauthorized access to the data present in the network is thwarted. Only the intended sender and receiver possess the means to retrieve the message from the concealed data, ensuring confidentiality and privacy.*

Keywords: Rivest-Shamií-Adleman(RSA), Cíyptogíaphy, Steganogíaphy