Enhancement of Data Security with Two Key based Image Steganography

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This pandemic period has led people to work more with digital platforms. This rise of communication through the web has brought about a change in the way people communicate with each other. Due to the increasing amount of data being exchanged digitally, data security has become a major concern. From this research, we propose a method to protect the sensitive data transfer over insecure networks. Steganography is a process that involves hiding sensitive information behind the other data. This method prevents unauthorized individuals from accessing the data. In the proposed method, a grayscale secret image is hidden under a 3-layer color image. The pixels of stego image will be embedded into the carrier media which is an image, by using a Pseudo-Random Number Generator (PNRG). A random number will be generated specifically to the secret token given and the assigned color image will also be assigned randomly which is different from the traditional methods used in image steganography. For testing and result analysis purposes, we use popular measurements which are and Mean Square Error (MSE) and Peak Signal Noise Ratio (PSNR) measure. These factors have proven the proposed method to be more effective than the available security measures.

Keywords: *Data security, Fusion, Image steganography, Least significant bit technique, PRNG (Pseudorandom Number Generator)*

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