Deployment of Matrix Transpose in Digital Image Encryption

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Abstract : Encryption is used to conceal information from prying eyes. Presently, information and data encryption are common due to the volume of data and information in transit across the globe on daily basis. Image encryption is yet to receive the attention of the researchers as deserved. In other words, video and multimedia documents are exposed to unauthorized accessors. The authors propose image encryption using matrix transpose. An algorithm that would allow image encryption is developed. In this proposed image encryption technique, the image to be encrypted is split into parts based on the image size. Each part is encrypted separately using matrix transpose. The actual encryption is on the picture elements (pixel) that make up the image. After encrypting each part of the image, the positions of the encrypted images are swapped before transmission of the image can take place. Swapping the positions of the images is carried out to make the encrypted image more robust for any cryptanalyst to decrypt.

Keywords : image encryption, matrices, pixel, matrix transpose

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