

REVERSIBLE DATA HIDING IN ENCRYPTED IMAGES BASED ON PROGRESSIVE RECOVERY

ABSTRACT:

In the modern era of digital communication a transfer of a secret message is a contestable one. Several methods have been proposed and investigated in the literature to provide privacy for communication. Data hiding technique conceals the secret message into cover image, where the image embedded with secret message, WHICH is being transmitted to prevent the other party from modifying, intercepting, and tampering, thus protecting the data. This proposes a method of reversible data hiding in encrypted images (RDH-EI) based on progressive recovery. The aim of this work is to hide & retrieve back the data in encrypted images.

Three parties are involved in the framework, including the content owner, the data-hider, and the recipient. The content owner encrypts the original image using a stream cipher algorithm and uploads ciphertext to the server. The data-hider on the server divides the encrypted image into three channels and respectively embeds different amount of additional bits into each one to generate a marked encrypted image. On the recipient side, additional message can be extracted from the marked encrypted image, and the original image can be recovered without any errors. While most of the traditional methods use one criterion to recover the whole image, we propose to do the recovery by a progressive mechanism. Rate-distortion of the proposed method outperforms state-of-the-art RDH-EI methods.

