

## **A novel steganography algorithm using edge detection and MPC algorithm**

### **ABSTRACT**

With the rapid development of the Internet, preserving the security of confidential data has become a challenging issue. An effective method to this end is to apply steganography techniques. In this paper, we propose an efficient steganography algorithm which applies edge detection and MPC algorithm for data concealment in digital images. The proposed edge detection scheme partitions the given image, namely cover image, into blocks. Next, it identifies the edge blocks based on the variance of their corner pixels. Embedding the confidential data in sharp edges causes less distortion in comparison to the smooth areas. To diminish the imposed distortion by data embedding in edge blocks, we employ LSB and MPC algorithms. In the proposed scheme, the blocks are split into some groups firstly. Next, a full tree is constructed per group using the LSBs of its pixels. This tree is converted into another full tree in some rounds. The resultant tree is used to modify the considered LSBs. After the accomplishment of the data embedding process, the final image, which is called stego image, is derived. According to the experimental results, the proposed algorithm improves PSNR with at least 5.4 compared to the previous schemes.