Abstract

In structured P2P systems, message deliverance can be done by identifying the peer IDs of the individual systems. The initiator has to decide the destination and can route the message through one or more hops. The message passes from one hop to another correctly by identifying the IP address and finally reaches the destination. In this paper we propose an efficient routing strategy to control the routing path and to identify the malicious nodes. We also eliminate the drawbacks of encryption by introducing steganography in message deliverance. This paper proposes a new steganographic encoding scheme which separates the colour channels of the windows bitmap images and then hides messages randomly in the LSB of one colour component of a chosen pixel where the colour components of the other two are found to be equal to the key selected. In addition to this we apply 3D-DCT based Steganography which embeds the text message in LSB of the Discrete Cosine (DC) coefficient of digital picture. Then
Huffman encoding is also performed on the secret messages/images before embedding and each bit of Huffman code of secret message/image is embedded in the frequency domain by altering the LSB of each of the DCT coefficients of cover image blocks. The experimental results shows that the algorithm has a high capacity and a good invisibility. Moreover PSNR of cover image with stego-image shows better results in comparison with other existing steganography approaches. Furthermore, satisfactory security is maintained since the secret message/image cannot be extracted without knowing decoding rules and Huffman table. An implementation of these methods and their performance analysis has been done in this paper.

Reference

- Dr.Ekta Walia, Payal Jain, Navdeep, “An Analysis of LSB & DCT Based Steganography”.
LSB, 3D-DCT and Huffman Encoding based Steganography in Safe Message Routing and Delivery for Structured Peer-to-Peer Systems


Index Terms

Computer Science
Artificial Intelligence

Key words

Peer-to-Peer
Least Significant Bit (LSB)
Discrete Cosine Transform (DCT)
Huffman Encoding
Steganography