Image Authentication System using LDPC and Watermarking Technique

Abstract

Nowadays, the rate of using digital images is increasing exponentially because of its low cost and easy manipulation property. It is obvious that digital images captured from CCD cameras or other digital image devices have to be analyzed and determined before processing it, to keep the integrity and ensure the accuracy and reliability of the digital image. We need some sort of robust methods and standard procedures that guarantee and strengthen the authenticity of digital images. Image authentication is a technique that analyzes a digital image and determines whether it is altered or not. Image authentication technique is very useful for various organizations such as health care, law enforcement agencies and insurance sector etc. Image authentication is also important in content delivery via untrusted intermediaries, such as peer-to-peer (P2P) file sharing. Untrusted intermediaries might tamper the contents of image. Distinguishing the legitimate diversity of encodings from malicious manipulation is the challenge addressed in this paper. We developed a LDPC and watermark based new approach for image authentication. With the help of this approach we can authenticate images effectively. In our technique, we provide LDPC quantized image projection and the Encrypted image as authentication data. As well as watermark image that was embedded into original image to
identify legitimate or illegitimate state of image authentication system. These data can be correctly decoded only with the help of an authentic image as side information. This technique provides the desired robustness against legitimate encoding alteration, while detecting illegitimate variations.

References


Index Terms

Computer Science

Image Processing

Keywords

Image Authentication  Low Density Parity Check (LDPC)  Digital Watermarking