

Steganographic on Pixel Value Differencing in Iris Biometric

Abstract

Biometric technology was widely used in more than decade ago and become convenient since human uses their own physical traits and behaviour rather than using keys and IDs to enter the systems. As the arising of biometric use, the issues of security in biometric data and the system points exist. The security and integrity of biometric data presents a major challenge as many benefits of biometric may quite easily become impediment. Every point of vulnerability in the biometrics system consist of specific defend techniques to prevent the misidentification of the real person. In biometric security system, techniques such as watermarking and steganography have been used in attempt to improve security of biometric data. Steganography has become one of the technique used in defending data and system in biometric security The techniques of steganography is divided into two embedding methods which are the least significant bits (LBS) and pixel value differencing (PVD). LBS is most popular techniques for data hiding field and data embedding since it embeds the fixed-length secret bits in the same fixed-length of pixel. While, PVD works better by providing a high quality stego image, besides the high capacity of concealed information. PVD provides high capacity and produces a stego image with good pixels value. PVD technique is also resistant to statistical attacks. It embeds the secret data in the difference as well as in the sum of the two contiguous pixels. In steganography technique, standard measurement to test the performance of stego image quality due to the hiding of message by using the Peak Signal-To-Noise Ratio (PSNR) and Mean Squared Error (MSE). The aim is to achieve higher value of PSNR that indicates a better reconstruction. The expected findings shows a better results of stego image quality based on PSNR and MSE. As a conclusion, the study of the project brings a good impact of higher security towards steganography field in biometrics applications.