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RESEARCH ARTICLE

THE IMAGE STEGANOGRAPHY AND STEGANALYSIS BASED ON PEAK-SHAPED TECHNIQUE FOR MP3 AUDIO AND VIDEO

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ABSTRACT: In this paper provides on steganography and steganalysis for digital images, mainly covering the fundamental concepts, the progress of steganographic methods for images in spatial representation and in JPEG format, and the development of the corresponding steganalytic schemes. The steganographic technique for the MP3 audio and video format, which is based on the Peak Shaped Model algorithm used for JPEG images. The proposed method relies on the statistical properties of MP3 samples, which are compressed by a Modified Discrete Cosine Transform (MDCT). After the conversion of MP3, it's possible to hide some secret information by replacing the least significant bit of the MDCT coefficients. The performance analysis has been made by calculating three steganographic parameters: the Embedding Capacity, the Embedding Efficiency and the PSNR. It has been also simulated an attack with the Chi-Square test and the results have been used to plot the ROC curve, in order to calculate the error probability.

Keywords: Information hiding; Steganalysis; MP3 Steganography; Digital Image; Peak-Shaped Technique

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