Novel algorithms to steganalysis of uncompressed and compressed images

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Abstract: A large number of commercial steganographic programs use the Least Significant Bit (LSB) embedding as the method of choice for message hiding in 24-bit, 8-bit color images and grayscale images or non-zero DCT coefficients (compressed images-JPEG images) and DWT coefficients of high subbands (compressed images- JPEG2000 images). It is commonly believed that changes to the LSBs of colors (or DCT coefficients) cannot be detected due to noise that is always present in digital images. In this paper, we introduce two novel methods of steganalysis that can detect LSB embedding reliably in both spatial domain and frequency domain. Methods of statistical estimation and statistical hypothesis test are applied for our problem.
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