Steganalysis on Least Significant Bit Matching Video

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Abstract

Video Steganography deals with hiding secret data or information within a video file without changing the video display or audio. The secret information is embedded in the cover frames by splitting data. If LSB (Least Significant Bit) matching, also known as ±1 embedding, is used, the detection rates are considerably reduced. In particular, since LSB embedding is modeled as an additive noise process, detection is especially poor for images that exhibit high-frequency noise - the high-frequency noise is often incorrectly thought to be indicative of a hidden message. To overcome this, we propose a targeted steganalysis algorithm that exploits the fact that after LSB matching, the local maxima of a video frame gray-level or color histogram decrease and the local minima increase. Consequently, the sum of the absolute differences between local extrema and their neighbors in the intensity histogram of stego video frames will be smaller than for cover video frames. In this paper, we use the mp4 files(less than 1 minute) which have inserted the stego message using the LSB matching. And then, this video is split into frames and each frame is analysed if the stego exists or not.