



A NOVEL APPROACH FOR HIDING MESSAGES IN MIDI STORAGE USING CRYPTOGRAPHIC ALGORITHM

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ABSTRACT

This Project is the software developed for hiding information which uses the technology called as Steganography –derived from the Greek words meaning, “Covered writing”, is the art of hiding information in ways that prevent its detection. It is a method akin to covert channels, and invisible links, which add another step in security. A message in cipher text may arouse suspicion while an invisible message is not. Digital steganography uses a host data or message known as a “Container” or “Cover” to hide another data or message in it. The conventional way of protecting information was to use a standard symmetric or asymmetric key system in encryption. Steganography can also be used to place a hidden “trademark” in images, music, and software, a technique referred to as watermarking. To ensure the privacy of the communication between two parties, various new methods are being developed. Cryptography being the mother to all those projects. However, cryptography is like a tool, it can do as well as it is programmed to do. Also, there are various different techniques that can be implemented to attain a certain level of security. Here we implement a technique for data hiding in audio images, known as Audio file Steganography. First the audio file which behaves as carrier file is selected. Then a message or a text file to be embedded in audio is selected. Then a key file is selected. The key file contains characters whose ASCII values are taken for encryption. Then the file is embedded in audio using low bit encoding mechanism and extraction of embedded message is being done vice-versa.

Keywords: Cryptography, cipher text, ASCII value, audio file

1. Introduction

Data hiding in audio signals is especially challenging, because the Human Auditory System (HAS) operates over a wide dynamic range. The HAS perceives over a range of power greater than one billion to one and a range of frequencies greater than thousand to one. Sensitivity to additive random noise is also acute. The perturbations in a sound file can be detected as low as one part in ten million which is 80dB below ambient level. However there are some ‘holes’ available. While the has a large dynamic range, it has a fairly small differential range. As a result, loud sounds tend to mask out the quieter sounds. Additionally, the HAS is unable to perceive absolute phase, only relative phase. Finally there are some environmental distortions so common as to be ignored by the listener in most cases. Information analysis and data Gathering is on growing filed for secure digital communication. Hide the data or information or secure message into any kind of media communications like text, image, audio, and video is known as steganography. It is also called payload size and removes to robustness. The data hiding is classified into three classes of digital technique. There are Invisible watermark, embedded data the last special one is steganography. In steganography, the text to be concealed inside the image is called embedded data. Embedded data hide the password or secret keynote into the image. Steganography is the art of cover and hidden message. It is used to cover the information from the third party. The steganography has a major role in data hide

into image. (1) Digital communication has done by electrically so new issues and opportunities will arrive. The Encryption is we want to keep our messages secure so we use encryption in military and political information and mail. In the data hiding technique, the images are needed for it, because the images are high-capacity, redundancy and human visual system (HVS). The reason for images in data hiding applications, the goal is to help s human observer perceive the visual information in an image. It's impartment to understand the human visual system (2). Visual Identification is easy for a human to realize what difficult task. It requires minimum presentation time to identify the object correctly. The goal of the topic is effectively hiding the efficient data by embedded the visual content into a visual cover object. The challenge is two criteria for embedding in secure data. One is visual Quality another one security. The human visual system to find the visual changes by stenography embedded, the performance is called stenography tool. These tools include various algorithms for analysis of the structure of stenography container. Stenography is a process of communication; some amount of information embedded with one innocent look information its called cover image (3). The cover means secure information or images inside. The attributes of stenography are imperceptibility, capacity, and robustness. The imperceptibility is the most requirements of stenography algorithms. The good stenography system should not degrade the quality of the image and the secret information is not visible and undetectable for human vision. That is no difference between the original image and stego image. The stego image results in information after the embedded image. The second one is Capacity means the hiding image capacity should be very high in contrast of watermarking. The last one is robustness, which is the system should be in not manipulate the image. Statistical steganalysis is finding the hidden data by statistical test on image. The novel algorithms are used to improve the capacity and security of the stenography technique. The three sages are improving the performance first one is statistical performance of the cover image. The second one is splitting the pixel of the cover image. The last one is to replace the bits of the pixel with a message (4).

$$\text{Stego object} = \text{cover image} + \text{secret message} + \text{key}$$

2. Methodology

The cover image selection is based on the stenography output. The cover image divided the sequence of local block 4 X 4. This technique was applied to the image decoder with Gabor filters. The secret images in the blocks were called the closest block. The maximum number of the closest block with cover images chose the container by given a secret image. The problem of selection is classified into two levels. One is Global level filtering to skip the unmatched object for the cover image. The latter is a block-level similarity, which is selecting the cover image by secret image and candidate covers.

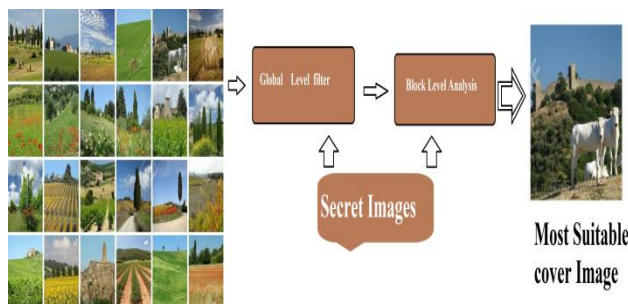


Fig-1 Proposed Approach

The secret image has embedded into the host image, the host image similar to the original version. The host image and secret images are robust to the usual attack. The secret and host images are divided into the block of size 4 X 4. The block of the secret images improves the visual quality. The novel framework has compared and tested with the previous solution. The proposed framework was proved the random cover selection is much worth than adaptive selection. An advantage of the methods follows: Effective cover selection is the output of the stenography. Cover image analysis, it effect the stenography metrics. The cover image selection, select the effective cover from available images that achieve quality and security.

3. Conclusion

Steganography transmits secrets through apparently innocuous covers in an effort to conceal the existence of a secret. Audio file Steganography and its derivatives are growing in use and application. In areas where cryptography and strong encryption are being outlawed, citizens are looking at Steganography to circumvent such policies and pass messages

covertly. Although the algorithm presented is a simple one and not without its drawbacks, it represents a significant improvement over simplistic steganography algorithms that do not use keys. By using this algorithm, two parties can be communicated with a fairly high level of confidence about the communication not being detected. In designing the “Steganography” utmost care was taken to meet user requirements as much as possible. The analysis and design phase was reviewed. Care was taken strictly to follow the software engineering concepts and principles so as to maintain good quality in the developed system as per the user requirements.

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