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QR CODE BASED ROBUST VIDEO WATERMARKING SCHEME BASED ON SVD AND DCT

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Abstract: **Data hiding should be used concealed transmissions, closed captioning, indexing, or watermarking. It is in contrast to cryptography, where the survival of the message itself is not masked, but the content is hidden. Video Watermarking is implemented in different fields such as military and Industrial applications. The 2D Barcode with a digital watermark is a widely interesting research in the security field. In this paper propose a video watermarking with text data (verification message) by using the Quick Response (QR) Code technique. The QR Code is prepared to be watermarked via a robust video watermarking scheme based on the lossless video watermarking using DCT techniques messages can be sent and received securely. Traditionally, video watermark was based on hiding secret information in image files .Lately, there has been growing interest in implementing video watermarking techniques to video files. The advantage of using video files in hiding information is to be added security against hacker attacks due to the relative complexity of video compared to image files. Video-based watermark techniques are mainly classified into spatial domain and frequency domain based methods. The main aim of video watermark is to hide information in the other wrap media so that other persons will not observe the existence of the information. This is a major distinction between this method and the other methods of secret exchange of information because, for example, in cryptography, the individuals perceive the information by considering the implied information but they will not be able to realize the information. In the reverse process check the logo and QR code for authorized ownership.**

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I INTRODUCTION

Nowadays, Digital video is one of the popular multimedia data exchanged in the internet. Commercial activity on the internet and media require protection to enhance security. The 2D Barcode with a digital watermark is a widely interesting research in the security field. In this project we proposed a video watermarking with text data (verification message) by using the Quick Response (QR) code technique. The QR Code is prepared to be watermarked via a robust video watermarking scheme based on the SVD and DCT. In addition to that logo (or) watermark gives the authorized ownership of video document. In this project mainly two processes, first embedding where original video is watermarked with verification message. Second, extracting process where embedded logo and verification is retrieved from the watermarked video.

Motivation:

This day, video gaining its popularity more and more. Also video is of the multimedia exchanged over internet. While transferring the video over internet, needs

to be transferred securely. Video watermarking is the best solution to provide an ownership to the video.

II LITERATURE SURVEY

Multimedia, IEEE Transactions on (Volume: 7, Issue: 1)

Statistical invisibility for collusion-resistant digital video watermarking We present a theoretical framework for the linear collusion analysis of watermarked digital video sequences, and derive a new theorem equating a definition of statistical invisibility, collusion-resistance, and two practical watermark design rules. The proposed framework is simple and intuitive; the basic processing unit is the video frame and we consider second-order statistical descriptions of their temporal inter-relationships. Within this analytical setup, we define the linear frame collusion attack, the analytic notion of a statistically invisible video watermark, and show that the latter is an effective counterattack against the former. Finally, to show how the theoretical results detailed in this paper can easily be applied to the construction of collusion-resistant video watermarks, we encapsulate the analysis into two practical video watermark design rules that play a key role in

the subsequent development of a novel collusion-resistant video watermarking algorithm discussed in a companion paper.

Multimedia, IEEE Transactions on (Volume: 7, Issue: 1):

Spatially localized image-dependent watermarking for statistical invisibility and collusion resistance We develop a novel video watermarking framework based on the collusion resistant design rules formulated in a companion paper. We propose to employ a spatially-localized image dependent approach to create a watermark whose pairwise frame correlations approximate those of the host video. To characterize the spread of its spatially-localized energy distribution, the notion of a watermark footprint is introduced. Then we explain how a particular type of image dependent footprint structure, comprised of sub frames centered around a set of visually significant anchor points, can lead to two advantageous results: pairwise watermark frame correlations that more closely match those of the host video for statistical invisibility, and the ability to apply image watermarks directly to a frame sequence without sacrificing collusion-resistance. In the ensuing overview of the proposed video watermark, two new ideas are put forward: synchronizing the subframe locations using visual content rather than structural markers and exploiting the inherent spatial diversity of the subframe-based watermark to improve detector performance. Simulation results are presented to show that the proposed scheme provides improved resistance to linear frame collusion, while still being embedded and extracted using relatively low complexity frame-based algorithms.

Information Forensics and Security, IEEE Transactions on (Volume: 1, Issue: 4) :

Digital Video Steganalysis Exploiting Statistical Visibility in the Temporal Domain We present effective steganalysis techniques for digital video sequences based on interframe collusion that exploits the temporal statistical visibility of a hidden message. Steganalysis is the process of detecting, with high probability, the presence of covert data in multimedia. Present image steganalysis algorithms when applied directly to video sequences on a frame-by-frame basis are suboptimal; we present methods that overcome this limitation by using Redundant information present in the temporal domain to detect covert messages embedded via spread-spectrum steganography. Our performance gains are achieved by exploiting the collusion attack that has recently been studied in the field of digital video watermarking and pattern recognition tools. Through analysis and simulations, we evaluate the effectiveness of the video steganalysis based on linear collusion approaches. The proposed steganalysis methods are successful in detecting hidden watermarks bearing low energy with high accuracy. The simulation results also show the improved performance of the proposed

temporal-based methods over purely spatial methods Advances in Engineering, Science and Management (ICAESM), 2012 International Conference on: Enhanced signal to error ratio in digital image watermarking using Wavelet Packet Transform. Digital image watermarking plays an important role in Multimedia security field. Methods developed under this are used to protect Intellectual property rights of digital data such as video, image, audio, etc. without affecting the fidelity of the original data. In this paper a Wavelet based digital image watermarking is applied on input '.bmp' image to generate watermark embedded image by inserting a logo '.bmp' image with non-zero scaling factor. A compactly supported Daubechies Orthonormal Wavelet Transform (dB) method and wavelet packet transform method are used. Extracted logo image and received image after both watermarking process are analysed in terms of signal to error ratio. Effect of various scaling factors can be seen on the values of signal to error ratio (SER) for both received output image and extracted logo image. It has been found that there is significant increase in SER (4.84Db to 5.35dB) observed for received output image in the case of Wavelet Packet Transform.

III PROBLEM STATEMENT

The main aim of the project is to provide software that usually works by watermark a text message or company name into QR-Code image and this QR image embedded behind a video which makes unable for a human eye or ear to detect. On review, of a digitized video watermarking before and after a message was inserted, will show video files that appeared to have no substantial differences. The technique, known as video watermark, is the practice of embedding secret messages in other messages, in a way that prevents an observer from learning that anything unusual is taking place. Encryption, by contrast, relies on ciphers or codes to scramble a message. Video Watermark in Videos is similar to that of watermark in Images, apart from information is hidden in each frame of video. Video watermarking in the modern day sense of the word usually refers to information or a file that has been concealed inside a digital Picture, Video or Audio file. The practice of video watermark has a distinguished history. During World War 2 invisible ink was used to write information on pieces of paper so that the paper appeared to the average person as just being blank pieces of paper. Liquids such as urine, milk, vinegar and fruit juices were used, because when each one of these substances are heated they darken and become visible to the human eye.

IV ARCHITECTURAL DESIGN

1. User :

The main aim of the project is to provide software that usually works by sending a text message behind a video which makes unable for a human eye to detect. On review, of
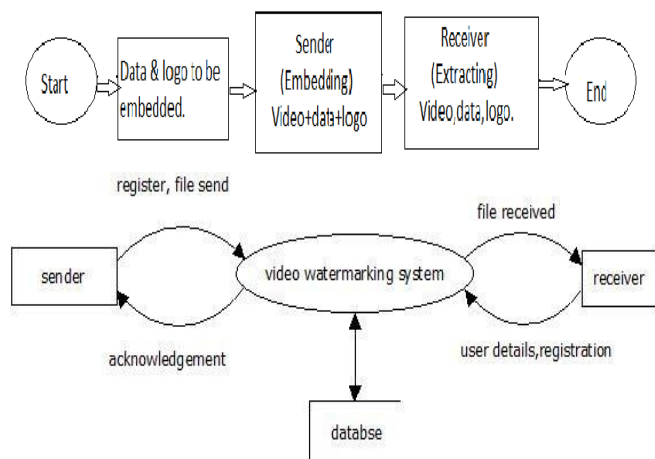
a digitized video before and after a message was inserted, will show video files that appeared to have no substantial differences. Proposed system mainly consist of two modules which comprises sub-modules,

Embedding Module:
- Video Frames Extraction Module
- Frames embedding Module
- QR-code generation Module
- Video Watermarking Modul
- Extracting Module
- Decoding Module
- Details extraction Module

Extracting Module:
- Decoding Module: In this module, watermarked frames are get extracted from watermarked video. In this process, watermarked I-frames and QR-code are get separated. Logo is recovered from the watermarked I-frames.
- Details Extraction Module: Finally QR-code is read by barcode reader and original information get extracted. Company name is decoded from QR-code in string format.

V CONCLUSION

This method has achieved the improved imperceptibility and security watermarking. In this QR code encoding process and get excellent performances. In the first method watermark was embedded in the diagonal element. On the other hand embedding text messages in the QR code image. So, the dual process given two authentication details.

The logo is located very safely in the QR code image. This method is convenient, feasible and practically used for providing copyright protection. Experimental results show that our method can achieve acceptable certain robustness to video processing.

Future Scope: In future we will extend our research work for all kind of video file input. Now in current scenario system is able to take input video in mpg format only.

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