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Article

A Vigorous QR Code using "DCT-SVD"

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I N F O

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A B S T R A C T

Data hiding must use secret transmissions, closed captioning, indexing, or watermarking. It is in dissimilar to cryptography, where the survival of the message itself is not masked, but the content is unseen. Video Watermarking is implemented in dissimilar fields such as military and business applications. Widely interesting research in the security field is 2D Barcode with a digital watermark. By using the Quick Response (QR) Code technique, this paper has proposed a video watermarking with text data (verification message). The QR Code is arranged to be watermarked via a robust video watermarking scheme based on the loss less video watermarking using DCT techniques messages can be sent and expected securely. Traditionally, on hiding secret information in image files, video watermark was based. Recently, Interest to put on video watermarking approaches to video files has been rising. In hiding information is to be additional security in contradiction of hacker attacks due to the relative complexity of video compared to image files is benefit of using video files. Video-based watermark techniques are mainly confidential into two approaches. The very primary is the spatial domain and the second is frequency domain-based methods. Video watermark must hide information in the other wrap media so that other persons will not observe the existence of the information, is its main aim. This is a most important difference between this method and the other methods of secret replace of infosince, for instance, in cryptography, the individuals perceive the information by considering the implied information but they will not be able to realize the info. To check the logo and QR code for authorized ownership is in the reverse process.

Keywords: Halftone Image, Watermarking, Halftone Visual, Watermarking, Optimization, Noise Tolerance Ability

Introduction

A new broad Error Diffusion based Halftone Visual Watermarking (EDHVW) strategy, Content aware Double-sided Embedding Error Diffusion (CaDEED) has been proposed. By means of view about the usual watermark unraveling implementation with particular substance of the cover pictures and watermark, diverse commotion resistance capacities of different cover picture content and the diverse significance levels of each pixel (while being seen) in the mystery de-sign (watermark). Nowadays, one of the popular multimedia data exchanged in the internet is digital video. Commercial activities on the internet and media have need of protection to enhance security extensivelystimulating research in the security is 2D Barcode with a digital watermark. A video watermarking with text data (confirmation message) by means of the Quick

Response (QR) code method is being planned in this paper. To be watermarked via a robust video watermarking scheme based on the SVD and DWT the QR Code is equipped. Official ownership of video document is being given in addition to that logo (or) watermark. In this project mainly two processes, first embedding where original video is water-marked with verification message. Second, extracting process where fixed logo and verification is saved from the watermarked video.

Review of Literature

A Robust QR- Code Video Watermarking Scheme Based On SVD and DWT Composite Domain[1]

Now days, One of the popular multimedia data exchanged in the internet is digital video. Commercial movement on the internet and media need protection to enhance protection. The 2D Barcode with a digital watermark is a broadly interesting research in the safety field. In this paper it has propose a video watermarking with text data (verification message) by using the Quick Response (QR) Code technique. The QR Code is organized to be watermarked via a robust video watermarking scheme based on the (Singular Value Decomposition) SVD and (Discrete Wavelet Transform) DWT. In addition to that logo (or) watermark gives the certified rights of video article. SVD is an eye-catching algebraic transformer watermarking applications. SVD is useful to the cover I-frame. The extracted diagonal rate is fused with logo (or) watermark. DWT is useful on SVD cover image and QR code image. The inverse transform on watermarked image and insert the frame into video this watermarked (include logo and QR code image) the video file directs to official customers. In the oppositeprocess it checks the logo and QR code for official ownership. This untried outcome can attain acceptable perceptibility and sure robustness in video processing.

An Optimized Un-compressed Video Watermarking Scheme based on SVD and DWT[2]

In this paper, we present a novel quick and robust video watermarking scheme for RGB uncompressed AVI video sequence in Discrete Wavelet Transform (DWT) field using Singular Value Decomposition (SVD). For embedding scene modify detection is performed. The singular standards of a binary watermark are embedded within the particular values of the LL3 sub-band coefficients of the video frames. The resultant signed video exhibits superior quality. To test the robustness of the planned algorithm six different video dealing out operations are completed. The high computed PSNR principles indicate that the visual superiority of the signed and attacked video is fine. The low bit fault rate and high normalized cross correlation values indicate a high correlation between the extracted and embedded watermark. Time complication analysis shows that the planned scheme is appropriate for valid time application. It is concluded that the embedding and extraction of the proposed algorithm are well optimized. The algorithm is robust and shows a development over other similar reported procedure.

Content-Dependent Spatio-Temporal Video Watermarking using 3 Dimensional Discrete Cosine Transform[3]

In this paper we propose a content-dependent spatio-temporal watermarking method for digital videos. Content dependency is attained by joining the hash of the video string into the watermark. The video string is treated as a 3-dimensional spatio-temporal pointer for the purposes of video hash calculation and watermark embedding and finding. Our experiments illustrate that the video hash algorithm has good quality discriminating authority and robustness against a variety of attacks. The watermark is also shown in the experiments to have fine robustness against a variety of attacks, is particular when the watermark is copied from one video cycle to a different.

Video Watermarking Scheme Based On Robust QR-Code[4]

Nowadays, one of the admired multimedia information exchanged in the internet is Digital video. Security requires in enhancing security in commercial movement on the internet as well as media. A broadly interesting research is the 2D Barcode with a digital watermark is in the field of safety. By using the Quick Response (QR) Code technique, in this paper we counsel a video watermarking with text information. Via a robust video watermarking system the QR Code is organized to be watermarked based on the SVD (singular value decomposition) and DWT (Discrete Wavelet Transform). SVD is an eye-catching arithmetical transform for watermarking applications. In addition to that logo (or) watermark gives the certified ownership of video article. For the cover I-frame the SVD is used. With logo (or) watermark there fused the extracted diagonal charge. For SVD cover representation and QR code representation the SVD is used. The watermarked figure inverse transform and insert the frame into video, to certified customers this watermarked video folder sends. In the reverse procedure for certified ownership check the logo and QR code. Suitable imperceptibility achieved by these experimental outcome and in video processing there definite robustness.

A Watermark Technique based on SVD and DW Tcomposite Function with QR-code[5]

Now a days, due to growth in digital picture and internet technology general users can simply copy essential information and manufacture illegal copies of figure. So digital multimedia information replace through internet is major idea which requires security to enhance security, to resolve the copyright security trouble of various multimedia information and figure, we propose dissimilar watermark

technique used for information hiding by applying the QR Code technique. By using QR codes we have recommend DWT (Discrete-Wavelet-Transform), SWT (Stationary-Wavelet-Transform), SVD (singular-value decomposition) methodology for watermarking procedure. The 2D barcode with a digital watermark is a broadly interest research in protection. The combination of DWT and SWT with SVD give superior protection, robustness and imperceptibility.

Digital Video Watermarking Using DWT-DFT Transforms and SVD Technique[6]

Watermarking does the embedding a rights signal into the information in a straight line. So that, the signal is all the time present with the information (image, audio, video). DWT DFT SVD techniques are used in the planned scheme to recover the robustness and overall computation necessities. The planned algorithm is tested using three video sequences of dissimilar layout. In this approach achieved PSNR of the unique and watermarked video signal is more than 60 dB. The proposed format shows high robustness next to several attacks.

Proposed Methodology

In the below block diagram describes user provide his input video file, text data and security key for hiding data into Video. The process of system is to collect necessary input from user and encode the data into Video and Generate Watermark Video Similar to Input Video. When user wants to decode it then user needs to provide watermark video file and security key which is already used for encoding process. Systems validate watermark video and security key of user and decode the message from the video which is called as extracted data from the video. It is more secure.

Architecture

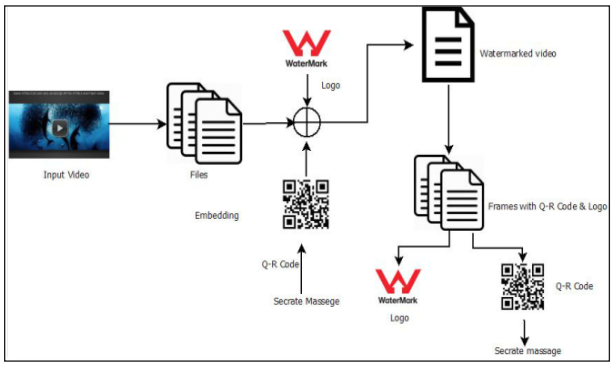

Figure 1.Proposed System Architecture

Algorithms

DCT is closely related to the discrete Fourier transform. It transforms a multi-dimensional signal (such as image) from its spatial domain to the frequency one. It is considered as a separable linear transformation. Accordingly, DCT linearly separate an image into spectral sub-bands, which has importance is strongminded by spectral energies and thus visual quality.

Watermark Embedding Scheme

Step 1: Initialize: key, pseudo random, alpha, binary image, video

Step 2: For frame number = 1: length (Video)

Step 3: LL, LH, HL, HH DWT2(video)

Step 4: If frame number is even number Then

Step 5: x DCT2(HL)

Step 6: Else If frame number is odd number Then

Step 7: x DCT2(LH)

Step 8: End If

Step 9: x zigzag scan of (x)

Step 10: L = Length of x

Step 11: choose middle frequency

C x ((L*0.375)+1:(L*0.625))

Step 12: CC = C + (*pseudo random*binary image)

Step 13: inverse 2DCT

Step 14: inverse 2DWT

Step 15: End For

Step 16: watermarked video

Step 17: calculate PSNR

Watermark Extracting Scheme

Step 1: Initialize: key, pseudo random, alpha, binary image, watermarked video

Step 2: For frame number = 1: length (watermarked video)

Step 3: LL, LH, HL, HH DWT2(watermarked video)

Step 4: If frame number is even number Then

Step 5: x^+ DCT2(HL)

Step 6: Else If frame number is odd number Then

Step 7: x^+ DCT2(LH)

Step 8: End If

Step 9: x zigzagscanof(x^+)

Step 10: L = Length of x

Step 11: choose middle frequency

C^+ x ((L*0.375)+1:(L*0.625))

Step 12: set value of C^+ to 0 and 1

Step 13: If C^+ = 0 Then

Step 14: C^+ = -1;

Step 15: End If

Step 16: predicted video using averaging filter (33 mask)

Step 17: D^+ repeat step 3 to 11

Step 18: estimate of the watermark Delta D^+ C^+

Step 19: watermark sign (Delta)

Step 20: use median filler for reduce noise

Step 21: End For

Step 22: calculate NC

Result Analysis and Discussion

Result

In proposed system, experiment needs to extract frames from video and get processed DCT and SVD algorithm to watermark the image with video. Frame extraction procedurerequirements time in seconds and it's completelybe contingent on frame rate of video taken as input.

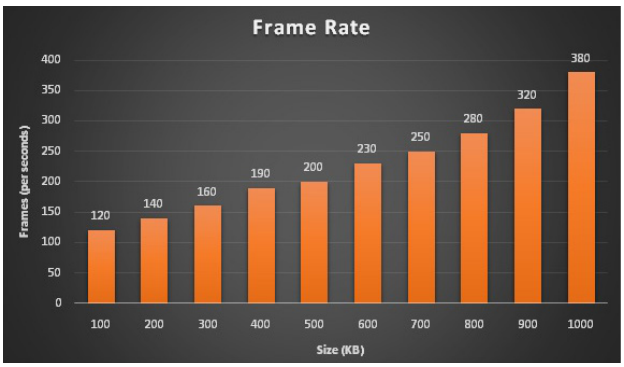

Figure 2.Frame Rate

System Requirements

Software Requirement:

Operating System : Microsoft Windows 7 or Above

IDE : Netbeans 8.2

Language: Java 1.8

Databese: MySql 5.5

Hardware Requirement:

Processor: Core Intel 3 or Above

RAM: 2 GB (min)

Hard Disk: 50 GB (min)

Conclusion

This method has achieved the enhanced imperceptibility and protection watermarking. In this QR code encoding procedure and get outstanding performances. In the first technique wa-termark was embedded in the diagonal aspect. On the other hand embedding text messages in the QR code picture. So, the double procedure given two verification factors. The logo is situated very securely in the QR code picture. This method is suitable, feasible and practically used for providing copyright security. Experimental outcome show that our procedure can achieve acceptable certain robustness to video processing.

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