

ONLINE DESTRUCTION OF PEJORATIVE MOVIES

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ABSTRACT: In the current scenario, there are many technologies which are being developed for Security purposes. Here is a system which is used for a main sector Entertainment sector. The Indication of methodology is completely based on QR (Quick Response) code which can be modified and created by our own. The main findings in this system is security is provided using location of manipulation. The QR code will be set to any of the frame or in the screen of a theatre. The code will be very much confidential and it will be known only to the authorized person. So, that no one gets alerted and sometimes they may skip the shots in the movie. Thus, the system brings security who does theft of a movie.

KEYWORDS: QR code, Thresholding algorithm, Movies.

INTRODUCTION:

QR Code is a Matrix code; the QR codes were developed in Japan in 1994 by Toyota subsidiary, Denso Wave to help track automobile parts throughout production. This technology has become very popular especially smart phone users. It is mainly used for security services like providing a privacy to softwares, applications, etc. Now it is emerging trend for all security issues. Before QR code there is another technology used here is Barcode. On following the tradition, this system is more secured and only the authorized person can access this system.

B) Structure of producing QR code: The initial step to generate QR code is to give respective informations like name, address, contact number of the person who is creating it. The main message to be encoded with the QR code should be given. While decoding and reading process, the message which is provided in the system will be sent to the authorized person.

C) Generating QR Code: There are currently updated softwares used for generating QR code. This history started with basic fields to be added in the QR code. And now many new fields are added to it. It can be generated online through many websites and it is been separated according to the Operating system we are using. For

example: QR code maker for MAC OS, TEC-IT Software for Windows, etc. Here is an example of generating QR code with the message "Hello World"



Figure 1: A Sample QR code containing the text "Hello World"

D) Use of QR code:

Your business, no matter how small or large, could use QR codes in a number of ways. You might auto generate one next to every product on your web site containing all the product details, the number to call and the URL link to the page so they can show their friends on their cell phone. You could add one to your business card containing your contact details so its easy for someone to add you to their contacts on their cell phone. Add them to any print advertising, flyers, posters, invites, TV ads etc containing:

1. Product details
2. Contact details.
3. Offer details.
4. Event details.
5. Competition details.
6. A coupon.
7. Twitter, Facebook, MySpace IDs.
8. A link to your YouTube video.

LITERATURE REVIEW:

QR (Quick Response) code is recognized from an application or generated online. The Initial step is to generate this QR code and start inserting it to the image which is obtained from a frame in a movie. The video is taken separately from a particular frame numbers and again it is divided into images and saved. Once this is saved, the QR code which is already generated is fit into the image and saved in JPEG/JPG file. The video can be saved and converted into AVI file. The frames are recognized and made into a readable one using many algorithms like FIP and AP algorithms. Before proceeding into these algorithms, Initiate with thresholding algorithm.

Matlab:

MATLAB is a programming language developed by MathWorks. It started out as a matrix programming language where linear algebra programming was simple. It can be run both under interactive sessions and as a batch job. This tutorial gives you aggressively a gentle introduction of MATLAB programming language. It is designed to give students fluency in MATLAB programming language. Problem-based MATLAB examples have been given in simple and easy way to make your learning fast and effective. MATLAB (matrix laboratory) is a fourth-generation high-level programming language and interactive environment for numerical computation, visualization and programming. MATLAB is developed by MathWorks. It allows matrix manipulations; plotting of functions and data; implementation of algorithms; creation of user interfaces; interfacing with programs written in other languages, including C, C++, Java, and FORTRAN; analyze data; develop algorithms; and create models and applications. It has numerous built-in commands and math functions that help you in mathematical calculations, generating plots, and performing numerical methods.

As per DMCA (Digital Millinium Copyright Act), the forenics department gives authority to these type of systems if it completely gets secured. They permit us to stop leakage even in many Social media(Facebook, YouTube).

METHODOLOGY:

There are many operations or steps should be taken care while generating this system. The system started with encoding and ends with the process of giving alert and stop the leakage of movies and stop uploading of movie in a website and also while recording the video from a theatre.

A) Q-Input Encryption:

The entire system starts with Matlab software and also using Matlab WebCam. Using this WebCam, the video starts recording and it is being saved. Mean while, the video is separated into many images according to the trigger value we are setting. The time interval is also mandatory in this section. Once the time interval is given the video starts and stops according to that. During this process, the image file which is been saved will be edited and QR code is attached to it. The QR code can be generated according to the color of the image or a frame. The size and alignment should be set to the image using pattern algorithms which will be discussed in the upcoming methods.

After done with these steps, the image should be saved in either JPEG or JPG file. The most important thing is logging off the frames which are not used for the detection purpose. This is only because; when large numbers of frames are occupied for one detection it takes more memory space. Inorder to avoid that, it is must that unused frames should be logged off.

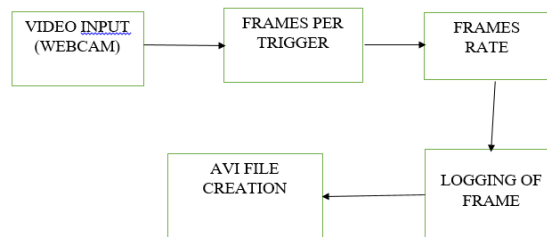


Figure 2: A Block diagram of Q-Input Encryption

B) Gray-Thresholding:

This algorithm is done with the image file what we saved in the previous module. In order to find and read the QR code in an image some alternations of the original image are required. The most important aspects is that the image is binary (all pixels are of value 1 or 0) and that the binary image does not contain too much noise. A noisy image contains more internal subpatterns, making it harder to find the

finder patterns of the QR code. Before processing the QR code it needs to be converted into a binary image with the help of a threshold. This threshold is found by using the built in MATLAB function *graythresh*. It is a global thresholding function using Otsu's method for automatic clustering-based thresholding. The algorithm uses bimodal histograms to classify the pixels in an image into two classes or clusters, an optimal threshold is thereafter calculated to separate the two pixel clusters. This threshold is then used together with MATLAB's built in function *im2bw* [3] to create a binary image which in turn can be used to identify the QR code. The JPG file will be given in RGB format. To make thresholding easier, convert this RGB format to Grey-scale image and proceed with this Thresholding algorithm. This process is used for segmentation and to convert into binary images. Many types of enhancements can be used in this algorithm. The global thresholding approach works well for evenly contrasted images. In images which are for example unevenly lit, it gives rise to errors. To be able to manage images with large contrast differences, an adaptive thresholding approach using locally calculated thresholding values can be used.

Firstly a certain amount of padding needs to be added to the image in order to be able to threshold it. The image must be of a size that makes it possible to fit an exact amount of thresholds into the image. No padding can lead to incorrect thresholding along the edges of the image.

The image is then divided into a number of sections and *graythresh* is used within each section to calculate several local threshold values. The number of thresholds to be used can possibly be calculated based on the number of unique

levels of intensity in the image in combination with the size of the QR code relative to the entire image.

The images which do not have a problem with a large range of contrasts or where the QR code take up most of the image will however still be using one single global threshold.

After the entire image has been transformed into a binary image, the padding is removed. The reason some images did not work with the adaptive thresholding is that too many thresholds were used and this resulted in some sections where black sections were thresholded into black and white anyway.

To solve this an allowed margin of error is added. Before thresholding the difference between the maximum and the minimum value within each section is calculated. If this difference is small, the section is chosen to be either entirely black or entirely white depending on if the average of the difference is above or below the global threshold

value. The adaptive thresholding approach unfortunately did not work for all test images, therefore, a global threshold is used in the final version. We are interested in a technique for segmenting images with multiple components (color images, Landsat images, or MRI images with T1, T2, and proton-density bands). It works by estimating the optimal threshold in one channel and then segmenting the overall image based on that threshold. We then subdivide each of these regions independently using properties of the second channel.

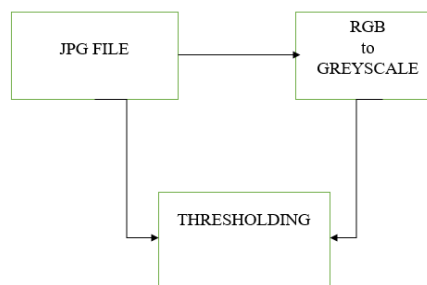


Figure 3: A block diagram of Gray-Thresholding

(C) PATTERN RECOGNITION:

In order to identify the QR code in the image, some patterns are searched for: three finder patterns (FIP) and the alignment pattern (AP). When these patterns are located, the image can be transformed so that the QR code can be decoded correctly.

In all of these finder and alignment patterns a specific subpattern can be found. The pattern consists of the relationship and ratio between black and white modules in the image. The relation is the same regardless of how the image is approached and hence the image can be scanned both horizontally, vertically and diagonally. This means that the subpattern can be found independent of the rotation of the QR code. Where the subpattern is found in more than one direction there is a possibility that the intersection point is a finder or alignment pattern. The Figure 2 demonstrates the subpatterns of a FIP.

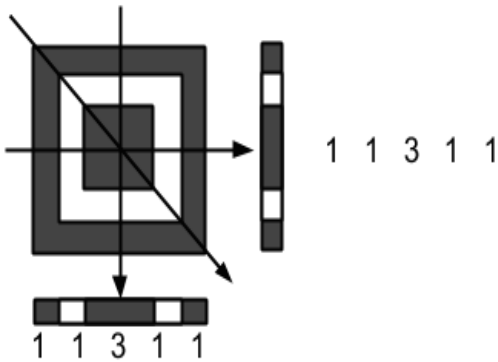


Figure 4: Can search different directions and still find the middle of the pattern

(D) E-ALERT:

Before proceeding into a notification module, it is must that the QR code should be a readable one. In order to make the code a readable one, decoding should take place.

Decoding:

When decoding the QR code, a reference image (Figure 8) is used to mask the FIPs and the AP so that these are not incorporated in the message. The QR code is scaled down to 41 x 41 pixels and is read column by column from left to right. The image is converted into vector form and the masked pixels are removed. The vector now only contains the actual data that will be read. The image is then converted into a binary string and divided into 8 bit strings, which are translated into a decimal number and translated into a character according to the ASCII table.

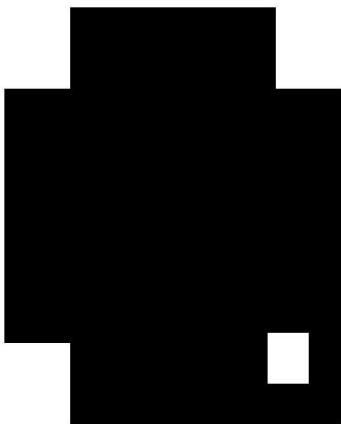


Figure 5: A mask to cover the FIP and AP

E-mail notification:

Certain market sensitive transmission outages directly affect a unit’s ability to supply power. Since market sensitive outages not made public affected unit generator owning company not given needed heads up. Prompted need for notification to be sent to specific unit owning companies. Some neighboring entities (e.g. MISO, NYISO) want email notification of certain facility outages. Speed of getting notifications have resulted in curtailment of some outages. New automated email notification functionality added to automatically email transmission outage info to neighbouring ISO/RTOs and Gen companies where outage will directly impact their unit. Email transmission outage data will be sent to unit owner or neighbour affected for: Market Sensitive outage notification (example – breaker outages with nuclear generators). Outages that impact Generation outage (mainly stability related). Outages that impact Nuclear off-site station light and power. Owner of facility for which email notification setup for a generation company. Outage info needed by neighboring ISO/RTO.

The E-mail is given with a message and a location of a QR code and that is attached to the movie. Whenever it is manipulated, the alert will be sent through the E-mail with the message attached to it. The E-Mail address is the address which is obtained from the authorised person.

RESULTS:

As per DMCA (Digital Millinieum Copyright Act), the forensic department can permit us to track a device with their IP address or a MAC address. The Cyber Crime can get the IP address and they can stop the leakage from where the movie is been leaked. The manipulation is identified by the theatre head. Only with his E-Mail address, it is possible to get the Location of a place whether it is been leaked.

There are two main system which lies under this process. One is while uploading the video in Internet and the other one while recording the movie from a theatre directly. While uploading the movie , only the message and the place will be sent as an e-mail. While recording the movie, the QR code is scanned and while recording itself after a few seconds the video cannot be saved and the a signal like vibrations will be shown. The QR code can be set to multiple number of frames. Since all the images are stored in JPEG or JPG format, it wont be taking large number of memory allocation. The QR code after getting scanned the video is said to be as manipulated.

DISCUSSIONS:

In the previous system, the fingerprint is used instead of a QR code. The main disadvantage is, it is impossible to find the location and the video cannot be stopped leaking in the social medias too. Eg: Facebook, YouTube.

This system can make the entire crew of a movie benefited and there wont be more number of threat happening in the film industry as they are facing lot of lose due to this PIRACY and BLU-RAYS.

CONCLUSION:

This study presented a framework for detecting QR codes in images of complex background. The detected patches of the same barcode were then connected and segmented from the background for decoding. This strategy of partial barcode patch detection made it possible to identify barcode with large degrees of distortion. Analysis demonstrated that the proposed approach was robust to blur, rotation, and lighting uniformity of barcode images. The proposed approach reached a detection rate of 95.2% from a database composed of 125 QR codes. The main limitation of this method is the assumption that single pixels in the QR code can be resolved in the acquired image and that they are only corrupted by Gaussian noise. This is a simple yet powerful model but it adds a constraint on the minimum resolution of the image. Since QR Codes gain increasing popularity through their use for marketing purposes, we expect that this kind of attack will receive more and more attention by the hacking community in the future. This paper will present some security conscious of the mobile phones users.

FUTURE ENHANCEMENTS:

There is a major disadvantage in my proposed system. All the above process is done with the online presence. Incase, if the video is getting recorded in the offline device it is impossible to stop the recording. The other case is entirely different, Only with the help of a online presence the video can be uploaded, shared etc.

The other major disadvantage is QR code reader. The Quick Response code is a code which is read only with the help of a QR code reader. Incase if it is not a smart phone, it is difficult to run with the QR code reader. The QR code will be as such gets recorded to the mobile device.

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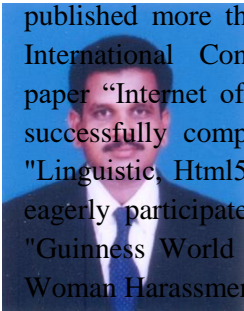
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