Preventing Movie Piracy

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ABSTRACT: In economy the piracy of Film has major impact, that which is a crime across the world. Due to this the file industry has great loss in market. Camcorder piracy is one of the significant way of the movie piracy i.e., films are recorded by compact gadgets inside theatres or any screening framework and uploaded in internet, sold in the markets. Devices like video cameras, secret cameras, mobiles etc. are used to capture the film inside the movie theatre. For this real time problem we are going to provide a solution which can prevent the movie piracy in theatres at-most. In our project we are going to use techniques of Image processing and IR blasters which produce harmless low frequency IR rays. We put the IR blasters at the back of the movie screen and these IR blasters are controlled by a micro controller which can maintain the frequency levels in control. Later we can capture the pictures of people who are watching movie by using scanner nothing but a special camera which can detect hidden objects also. And next we can analyze those pictures by using Image processing algorithms. Whenever we found the any hidden camera next we pass the IR rays which will corrupt the video.

KEYWORDS: Movie Piracy, Image Processing, Camera, Infrared Rays, Scanner

I. INTRODUCTION

"Piracy refers to the unauthorized duplication of copyrighted content that is then sold at substantially lower prices in the 'grey' market" and uploading it on Websites or convert them to DVDs and sell them on the market.

Cinema is a major entertainment for people in today's life. To entertain people a lot of investment is put on cinemas by the film – makers. Their effort is being ruined by few people by pirating the cinema content. They do it by capturing the video in mobile camera or a camcorder and upload it to websites or sell it to people and this goes on. Most box office releases are available online within a few days or even hours of the box office release. So the movie producers and theater owners are trying to minimize the loss and want to prevent this piracy. So our project will give a better solution that is, Instead of treating every movie audience as a potential pirate, an anti-piracy screening system can be implemented in order to make the pirate copy useless as well as having no effect on the audience.

II. LITERATURE REVIEW

"Gouri Raut, Kajal Bakade, Proff. S.V.Kulkarni" proposed the IR based piracy stopping technique based on image processing; it finds the digital camera devices in a particular area (like theatres,shopping centers) and pass IR transmitted rays to deactivate them [1]. "K.Abhishek, G.Chetan, M.S.Deepak, M.Akash, Proff. M.N.Rohith" proposed a prototype for avoiding camcorder piracy,how this procedure can outwardly spoils the recorded motion picture substance while accomplishing visual straightforwardness of fixed examples to the theater crowd and furthermore finds the one liable for robbery[2]."Savita C H,Kajol R D,Monica N,Latha S, Anil Raju Wadeyar" proposed a technique to avoid camcorderpiracy in movie theater. It can visually destroy the recorded movie contents while passing transparent interference signals to the theatre audience [3]."Karthik.S, Abhishek.P, Chandresh. P.M, Bharath. K.R"proposed anidea of avoiding the piracy which is a major constraint of Visual media. It presents a study on how major antipiracy actions affect the behavior of publishers in thelarge Bit Torrent portal who primarily publish copyrighted content [4]."Manasa K B, Amulya S M, Harshitha M, Rakshitha M S, Vinutha E T" proposed an idea of avoiding piracy which is a major constraint of visual media. Here anti-piracy is achieved by the study of visual transparency of added interference signals to the theatre audience. The RFID transponders help as tracking information to reveal one who is responsible of piracy [5].

"Abhishek Kumar B A, A Pranith, B Sumanth Krishna, Basavaraj J N Deepthi Murthy T.S"proposed to reduce the piracy in the theaters with the following work like using the RFID tags and IR sensors so that it generates the glares such that the movie cannot be viewed properly though it is captured. The main advantage of this project is it provides thesecurity for the module (in operating room), preventing movie piracy. The disadvantage of this model is Installation will be difficult that is we need to install in every theatres for Anti-piracy [6]. "Akshatha S, Deepika Vishwanath K, Neetha C, Raksha V M, Manjula Devi T H" proposed a system provides a method to prevent the illegal recording of movies in theatres. The IR transmitters are used in order to make the captured video useless. There can be various other application of this system which requires highdegree of privacy and security such as highly confidential conferences, meetings, research centers etc [7].

"Khai N. Truong, Shwetak N. Patel, Jay W. Summet, and Gregory D. Abowd" proposed an idea execution of a catch safe condition that can forestall the account of pictures and films of locales inside that physical space. [8]. "AbhigyaBhatnagar, AhireVivek, MagarPranjali, Proff.Priyanka Gujarathi" proposed that the seating area inside a theatre is divided intosmaller grids. First scanning of all the grids is done. Scanning is done few minutes after the starting ofcinema. This will provide the captured images of all the grids, to the processing unit [9]. "A.K.Veeraraghavan, S.Shreyas Ramachandran, V.Kaviarasan" proposed a system Capturing of bootleg videos and pictures from restricted area can be reduced using the application of infrared system [10].

III. PROPOSED SYSTEM

In our proposed framework we manage the projection method to kill the piracy in cinemas. We plan to vanquish camcorder robbery by seriously debasing the visual nature of the recorded film while making the impedance signals imperceptible to the crowd. Infrared producers are introduced in Movie Theater to meddle with the camcorder and make glares in the recorded casings.
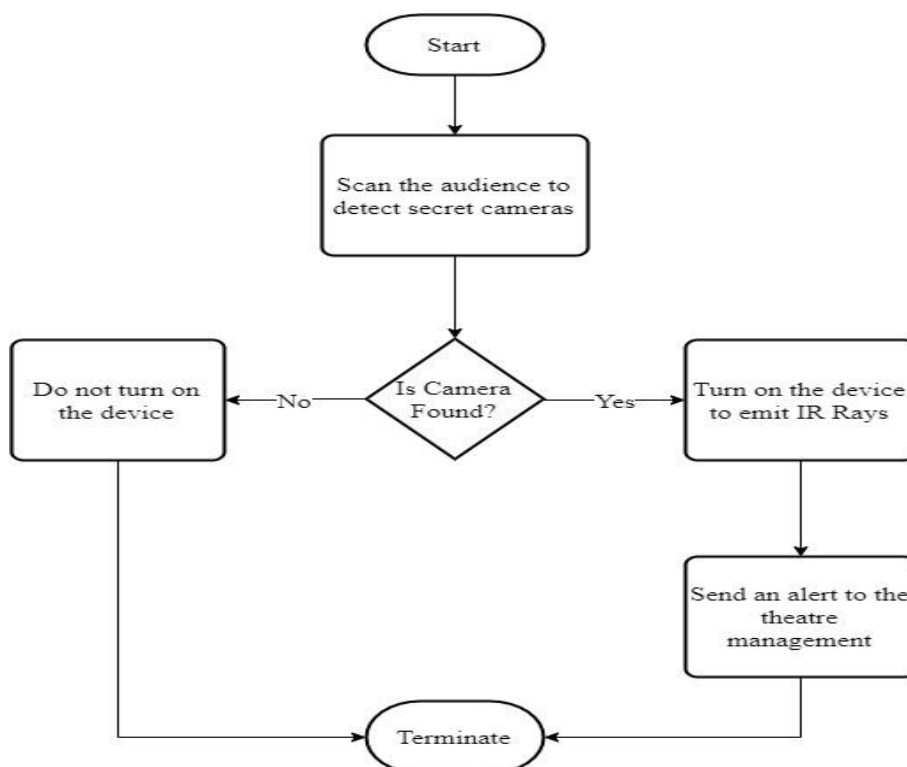
Our project consisting of two modules, the first module is to detect the video recording device. For that we are using scanner to scan the whole theatre for recording device. We take the pictures by using some special camera which can capture everything and later we process those pictures by using image processing algorithm. The algorithm detects the each and every small recording device and produces results. If any recording device founds the algorithm produces output as TRUE otherwise FALSE. If the result is TRUE then the second module will performs the remaining task. The main advantage of this first module is if device found then only second module will perform otherwise it don't do anything because of this power consumption will becomes less.
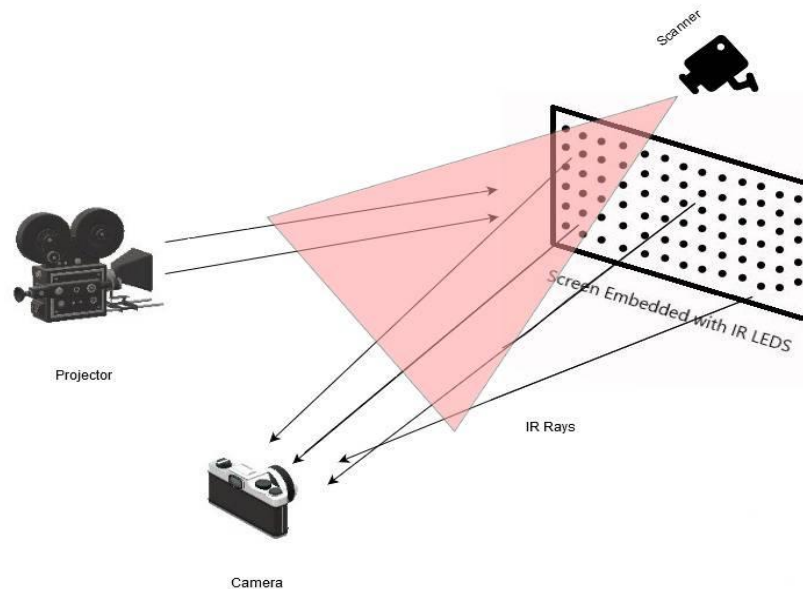

Figure: 1 Detecting Video Recording Camera Using Scanner

From figure 1Detecting Video Recording Camera Using Scanner states that how the hidden secret cameras can be detected by using the scanner. In Scanner we are having two functions one is capturing the images of audience and second function is processing the images by using image processing algorithm. First the scanner scans the whole audience in the theatre. In that scanner we are having some special camera for taking pictures of audience and next that images are sent through an image processing algorithm for processing the pictures taken by the scanner. By using that algorithm we can get the results of hidden recording cameras. Based on this result the second module is works that is device activation and sending alert message.

The second module is that once the camcorder is found then the device is activated which consisting of LED lights which emits low frequency harmless IR Rays behind the screen. After device gets activated an invisible light is projected from the back of the screen to the whole audience that falls on the cameras which are optically sensitive to infra-red light in-turn disturbing the recording functioning of any camera making an illegal recording in the theatre useless. If the device is not activated even after the camcorder is found then an alert message will be sent to the theatre management.

ALGORITHM:
1. Initialize Scanner
2. Capture images of the audience
3. Process the images using image processing technique
4. If camera_found == TRUE go to step-5
   Else go to step-11
5. Activate device to emit IR Rays
6. If camera_found == TRUE && device == Activated go to step- 7 & 8
7. Send an alert message to theatre manager stating that there is an active recording camera

8. Emit IR Rays to corrupt the recording
9. Else If camera_found == TRUE && device == Not Activated go to step-10
10. Send an alert to theatre management stating that there is a problem in the device
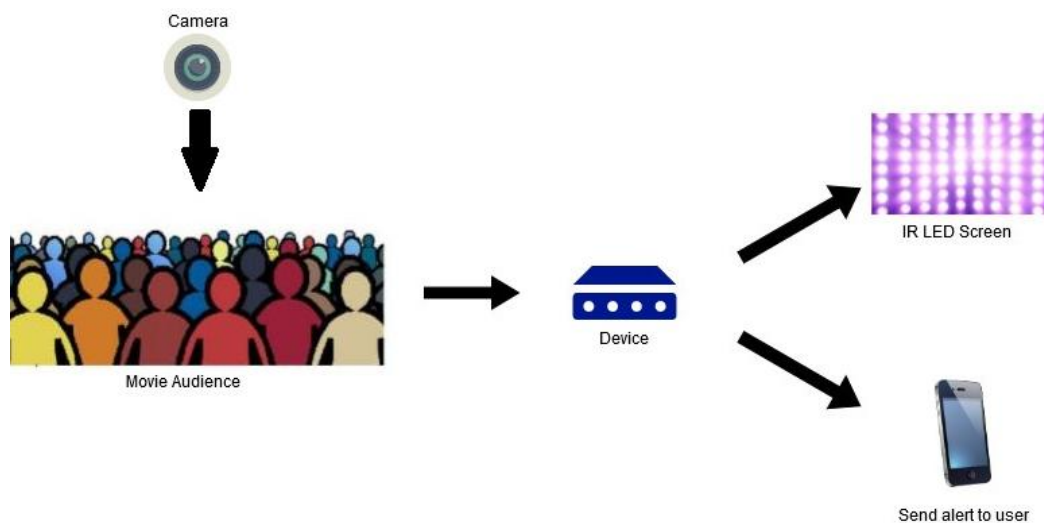11. Terminate.

Figure: 2 Device Containing LED Lights and Alerting System.

Figure 2 describes that after detecting the secret camera a signal is passed to the device and it gets activated. The device is fixed at the back of the screen which contains LED lights which emits IR Rays to the audience without disturbing their viewing. These IR Rays can corrupt the illegal video recording of the movie. IR Rays having the capability of corrupting the video content because those camera lenses are optically sensitive to the IR Rays. And this device also having the Alerting System which can be operated by using GSM module. If the device is activated after detecting the recording camera an alert message is send to the theatre manager stating that there is an active recording camera. If the Device is not gets activated even after detecting recording camera then also an alert message is sent to the manager stating that there is a problem in the device.

IV CONCLUSION

The proposed method is used to protect the movie to record illegally in movie theatres which results in huge losses to film producers and theatres. The initial step is capturing and processing the images of audience using Image Processing. If a camera is found then a signal is sent to the screen which is embedded with Infrared LEDs. The Infrared rays make the captured video useless without disturbing the view of audience. It also sends an alert to the theatre management stating that there is an activity of recording going on.

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