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Immoral Scene Censoring System

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Abstract: ***Harmful contents are rising in television day by day and this motivates the essence of more research in fast and reliable obscene and immoral material filtering. Adultery content image recognition is an important component in each filtering system. We use Skin detection process of finding skin colored pixels and regions in each frame of a video. This process is typically used as a preprocessing step to find regions that potentially have human faces and limbs in images. Many computer vision approaches have been developed for skin detection. Immoral imagery or as they put it pornography has been there for a long time and with the advent of web it has only just grown. Adultery is considered as obscene material whose intention is to provoke sexual arousal. So, it should be managed and certainly shouldn't be popping where it is not meant to. So we propose to design a system that takes a frame and detects if it is a pornographic image or not. We intend to be using SVM (Support Vector Machines) to exploit primitive information from different images and use the knowledge to determine whether given image is pornographic or not.***

Keywords: Adultery detection, Adultery censoring media player, **S**kin detection, Computer vision

1. Introduction

Increasing network bandwidth and storage capacity, video streaming, and web services like YouTube allow us to generate and share more digital video content than ever before (example, 20 hours of video are uploaded to YouTube at each minute). Correspondingly, new methods must be developed to cope with such huge loads of video data. One challenge in this context is the automatic detection of adult video content. Applications of this project include the recursion of personal video digest (e.g., for child protection) or digital forensics, where law enforcers need to detect the illegal pornographic content. The image domain, such technology has already been developed and is also applied in practice. Regarding pornographic video material, the straight forward approach would be to extract representative key frames and apply image classification techniques on them. In this paper, we demonstrate that better results can be achieved by enriching this standard approach with motion information. We compare key frame-based methods (skin detection and bag-of-visual-words) with two motion analysis approaches (periodicity detection and motion histograms).Our evaluation is performed on real-world adult web videos and intensive content from the web portal YouTube. Results show that a significant improvement can be achieved by combining both information sources (image content and motion) in a late fusion step.

Most work regarding the detection of pornographic material has been done for the image domain. Forsyth et al[1] proposed to detect skin regions in an image and match them with human bodies by applying geometric grouping rules. Wang et al. presented a system that achieves a speedup by a fast altering of icons and graphs. Successive steps include the detection of skin areas and nearest-neighbor classification. Popular data scientists “Jones and Rehg" focused on the detection of human skin by constructing RGB color histograms from a large database of skin and non-skin pixels, which allows to estimate the skin probability of a pixel based on its color. For adult image classification simple features of the detected skin areas are fed to a neural network classier (we will use similar approach in our evaluation). Rowley et al. used Jones' skin color histograms in a system installed in Google's Safe search.

A manually dined color range is used for deciding whether a pixel belongs to a skin area. The area's shape is then described by normalized central moments and matched to samples in a database. The other modalities have been employed for adult video content classification. Repeal combined skin color estimation with the detection of periodic patterns in a video's audio signal (The method could similarly be applied to the motion signal). For periodicity detection, the surface of the lines through local maxima and minima in the signal's auto correlation function is computed.

2. Literature Review

This paper focuses on how to detect immoral scenes in video by checking each video frame. Here we compare much adultery scene detection method. But we mainly focus in skin detection methods. D.A. Forsyth, [1] proposed an automatic system for telling whether there are immoral scenes present in an image. The system converts skin-like pixels using combined color and texture properties. These are then fed to a specialized grouper, then attempts to detect a human figure using geometric constraints on human structure.

This method offers an alternate view of object recognition, thus an object model is an organized collection of grouping hints obtained from a combination of constraints on color and texture and constraints on geometric properties such as the

structure of individual parts and the relationships between parts. This system is not as accurate as some recent object recognition algorithms, but it is performing a much more abstract task (find a nude rather than find an object matching this CAD model).

Seyed Mostafa, Hossein **[2]** in his method, describes the Fourier descriptors and signature of boundary of skin region is used as shape descriptor features. Fourier descriptors describe the shape in terms of its spatial frequency content. Fourier descriptors are the boundary based descriptors in 2D space using the Fourier methods. Next, important features for pornography which are more distinctive and less correlated are found based on Self Organizing Feature Maps (SOFM) and correlation analysis.

Jiann-Shu Leea, Yung-Ming Kuob [3] As can be seen in above methods, none of them consider the inference coming from special lighting and color altering. There exist a large number of naked pictures taken under special lighting. Usually, warm lighting is applied to make skin tone look more attractive, while human skin color deviates from the normal case at the same time. Dealing with the special lighting effect in the naked images is a difficult task. A feasible solution for the problem is to adapt the adopted skin Chroma distribution to the lighting of the input image. Based on this concept, a new naked image detection system is proposed. In this paper, they develop a learning-based chromatic distribution-matching scheme that consists of the online sampler.

V.A.Oliveira,A.Cohini,[4] This work describes an implementation for skin detection which relies on the H channel to characterize the skin colors range. Here Open Cv library is used for image Processing. Proposed system's program initially converts RGB images to HSV one. H channel is used to characterize the colors range for skin detection's color space.It is more related to human color. Skin color in channel H is characterized by values between 0 and 50, in the channel S from 0.23 to 0.6 for Asian and Caucasian ethnics. In this work they used images from different people, from different places of the world. Their detection range is better as compared with others.

Martin Stuetz, Martina Lindorfer, [5] In this paper, (svm) they present an adaptable solution for detecting nudity or pornography in color images. They combine a novel skin detection approach with machine learning techniques to alleviate manual image screening. Not all images have the same quality. Some are over or underexposed skin may contain compression artifacts or are simply of a small size and therefore not rich in detail. In order to use a pixel-based skin detection mechanism, the important is to equalize input pictures as good as possible. Naturally, a lot of possibilities to equalize images exist.

For the purpose of skin detection converting pixel onto RGB color cordinate alone is not effiecent.Main skin clor space use can hsv[4], YcbCr[6] and combination these.but better is hsv color space.by our literature review we analysised that for better skin detection huge saturation view (hsv) is effiecent.

3. Proposed System

In our proposed system we develop an application which use the technology described by Martin Stuetz, Martina Lindorfer, [5]. Main technique in our system is skin detection approach. Block diagram of proposed application is show in below (fig). First we analysis video in each frame and check whether any immoral scene in the frame. To retrieve video frames we use openCv and for skin detection and nudility test skin sheriff method [5] is used. If a particular continuous range of skin is identified (exposed) and which matches with human structure. We impose some restriction in displaying the video. Also we add a parental facility in application. We use this feature as a filtering option in a video player.

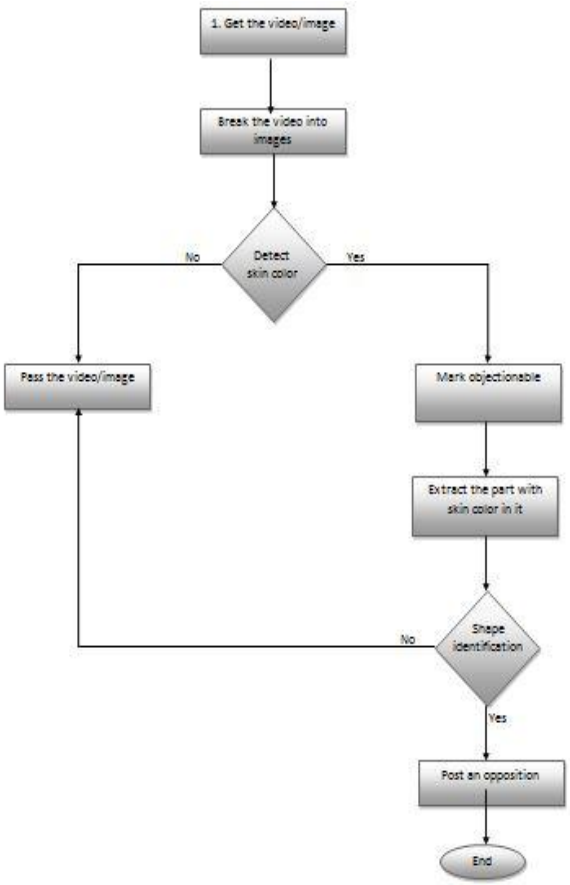

Figure 1: Proposed System

4. Future Work

Shape classification take large amount o f time or even minutes per image, thus classifications are not currently applicable to such a large number of images**[7].** In a next step, we will devise a method to estimate the age of individuals on contraband images and categorize them in adults and underage persons.we can also this techiniq ue as tool for forensics to automatically screen files.

5. Conclusion

In this project, we have addressed the automatic detection of pornographic content in videos, a problem with practical

applications in content altering and digital forensics. Our key contribution lies in the fact that we evaluate both image features and motion information as discriminative clues for the detection of pornographic material. To the best of our knowledge, the study presented in this paper is the rest one that compares both feature modalities. Particularly, we show that sign cant improvements can be achieved by a combination of image features and motion in a simple late fusion step.

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