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Android Based Image Identification System

Dipalee Hirde¹, Vaishnavi Jawade², Pooja Anasane³

Assistant Professor, P.G Department of Computer Science, DCPE, H.V.P.M, Amravati, India¹

Assistant Professor, P.G Department of Computer Science, DCPE, H.V.P.M, Amravati, India²

Assistant Professor, P.G Department of Computer Science, DCPE, H.V.P.M, Amravati, India³

ABSTRACT: In recent years, internet revolution resulted in an explosive growth in multimedia applications. The rapid advancement of internet has made it easier to send the data/image accurate and faster to the destination. Besides this, it is easier to modify and misuse the valuable information at the same time.

As a solution to this we develop "Secure Image Identification System Using Android". This tool will identify the mobile which is used to capture an image on his/her phone, so nobody will be able to misuse mobile images. The phone number or IMEI number of mobile will be encrypted in image. It will use steganography and digital watermarking techniques.

KEYWORDS: Steganography and digital watermarking techniques.

I. INTRODUCTION

Digital watermarking is one of the proposed solutions for copyright protection of multimedia data. A watermark is a form, image or text that is impressed onto paper, which provides evidence of its authenticity. Digital Watermarking describes methods and technologies that hide information, for example a number or text, in digital media, such as images, video or audio. The embedding takes place by manipulating the content of the digital data, which means the information is not embedded in the frame around the data. The hiding process has to be such that the modifications of the media are imperceptible. For images this means that the modifications of the pixel values have to be invisible. Furthermore, the watermark must be either robust or fragile, depending on the application. By "robust" we mean the capability of the watermark to resist manipulations of the media, such as lossy compression.

Steganography is art and science of invisible communication. Steganography is the method through which existence of the message can be kept secret. This is accomplished through hiding information in information, thus hiding the existence of the communicated information. Various steganography algorithms like Least Significant Bit (LSB) algorithm, Jsteg and F5 algorithms, out of these we are using LSB algorithm.

Privacy is the ability of an individual or group to insulate them or information about themselves and thereby reveal them selectively. Image privacy is the relationship between collection and dissemination of data, technology, the public anticipation of privacy, and the legal issues. Image privacy or image protection has become increasingly important as more and more systems are connected to the internet. Watermarking is a pattern of bits inserted into a digital image, audio or video file that specifies the file's copyright information such as author, rights and so on. Thus, watermarking approach is used to make sure of the protection of the data. However, watermarking is also designed to be completely invisible. In digital watermarking, the actual bits are scattered in the image in such a way that they cannot be identified and show resilience against attempts to remove the hidden data.

The example below shows that digital watermarking allows hiding information in a totally invisible manner. The original image is on the left; the watermarked image is on the right and contains the name of the author.



Figure 1: Digital Watermarking

II. RELATED WORK

Literature survey is process of determining what must be done in the system design. The planning to do it and the objectives of the system design are to decide in general how the system should be implemented. The individual components and program files and the documents will be identified. During the survey it is likely to be preparing the blue print for the system. The survey mainly involves the information gathering , user requirements , system Requirement and the customer interface survey which provides the detailed information about how to process. The data and produce the output. In this phase the developer grasp the requirement of the user or the customer by the direct interaction with them. Image processing can be described as every possible action performed on an image. This can be as simple as cropping an image, increasing contrast or scaling. Ever since digitalization of images came into the computer world, there was demand for image recognition. Image recognition is a classical problem in image processing. While humans can easily extract objects from an image, computers can't. For a computer an image is no more than a matrix of pixels. The artificial intelligence required for recognizing objects in this matrix, has to be created by a programmer. The task of finding correspondences between two images of the same scene or object is part of many computer vision applications. Camera calibration, reconstruction, image registration, and object recognition are just a few [1].Tirkel et al was one of the first used techniques for image watermarking. Two techniques were presented to hide data in the spatial domain of images by them [10]. These methods were based on the pixel value's Least Significant Bit (LSB) modifications. The algorithm proposed by Kurah and McHugh's [11] to embed in the LSB and it was known as image downgrading [12].

III. METHODOLOGY

Android camera module is use to capture an images. The propose methodology is using a camera module which provide to maintain the privacy, confidentiality and accuracy of the data security to the user. The camera module is able to hide the data inside the image as well as to retrieve the data from the image. This camera module having certain sub applications which are all as:

Registration System: The user have camera module has to register their all information such as name and mobile number of that user. When user have register their information then it can sends registration code and activate. After that it ready to use this camera module.

Taking Picture: Image can be enchanted by the user, while capturing this image it is having two options such as:

- └ Save
- └ Discard

If user wants to save the image, then he/she have to choose option as a save and if not then choose discard options. While capturing those images it can hide the information inside the image by using the digital watermarking technique.

IV. EXPERIMENTAL RESULTS



Figure 2: Start page

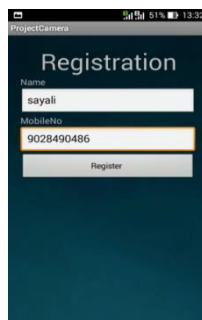


Figure 3: Registration form

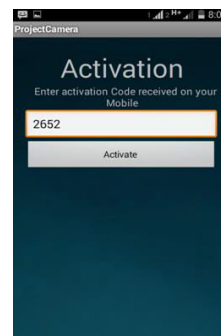


Figure 4: Activation form

Web Module:



Figure 5: Home Page



Figure 6: Registration form

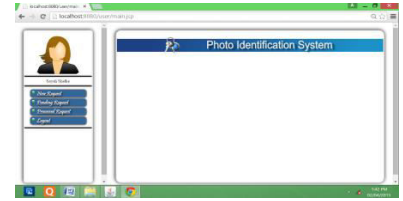


Figure 7 :Home page of user account

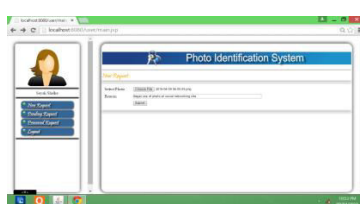


Figure 8: New request

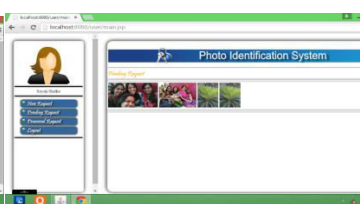


Figure 9: Pending Request

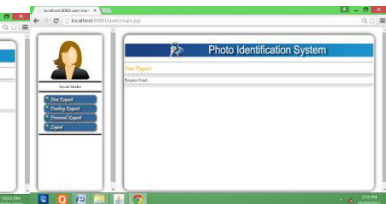


Figure 10: Request sends.

Pending Request and processed request in administrator module.

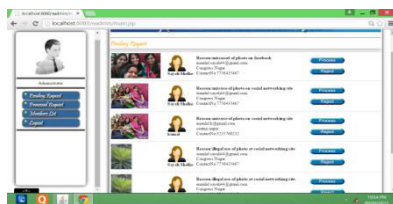


Figure 11: Pending Request



Figure 12:Processed Request



Figure 13: Member list

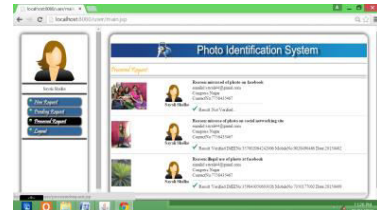


Figure 14: Processed Request in user account

V. CONCLUSION

We have implemented an image identification system which is based on android for social security issues and against cyber-crime taking place at several social networking sites. . It basically has a camera application which is used to hide data such as IMEI number, contact number of a particular android cell phone through which the image is being captured. It is a low cost, low in power consumption and compact in size and standalone system.

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