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Survey on Smart and Secure Photo Sharing Mobile Application using Machine Learning or api.ai System

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ABSTRACT: Nowadays, people capture photos and record their memories. Photo sharing has become a regular phenomenon these days. People share photos through social media as well as sharing mobile applications or software. But, sharing photos to every individual is difficult. We propose a secure and hassle-free mobile application which will share photos to individuals. In this paper we introduce an application which can share photos automatically with those who are present in photos. application automatically done the process of face detection of individuals from pictures. Then the detected face is compared with the database and sent to the picture to a particular user with all security.

KEYWORDS: Android, File Sharing, Face Detection, Security, Privacy

I. INTRODUCTION

When you ask people what possessions they would rescue from their burning house, one of the most frequent answers is the photograph album or a computer with their digital images. When in panic mode it's interesting that we would probably grab photos rather than valuable jewelry. This impulse to save our recorded memories is a powerful force which tells us much about the role of photography in our lives and our constant desire to distil our most precious moments into images.

We preserve the important events and people in our lives. The ceremonies of birth and birthdays, marriages and anniversaries, holidays and new houses are all recorded because they matter. Photographs are our personal story, a timeline of our lives filled with faces and places that we love. They are our story, which we can share with others. The hundreds of images come together to form a narrative of our lives.

Sometimes we can capture photos or click selfie in our friends mobile. Taking this picture from the friends is such a difficult task.

We can introduce the android application, which can detect the individual face from the photo and share the photo to that person with particular security check. In order for the system to function, it's necessary to implement three steps. First, it must detect a face. Then, it must recognize that face nearly

instantaneously. Finally, it must take whatever further action is required, to share photo to particular user.

Face detection is a broader term than face recognition. Face detection just means that a system is able to identify that there is a human face present in an image or video. Face recognition can confirm identity. It is therefore used to control access to sensitive areas.

II. RELATED WORK

In this section we are discussing different file replication protocols and methods presented to how to allocate resources and how to create replica.

- In [1] author Alen Salihbašić and Tihomir Orehovački - Development of Android Application for Gender, Age and Face Recognition Using OpenCV. The idea behind the face recognition system is the fact that every individual has a unique face. Like the fingerprint, an individual's face has many unique structures and features. Facial authentication and facial recognition are challenging tasks. For facial recognition systems to be reliable, they must work with great precision and accuracy. Images captured taking into account different facial expressions or lighting conditions allow

greater precision and accuracy of the system compared to a case where only one image of each individual is stored in the database. The face recognition method handles the captured image and compares it to the images stored in the database. If a matching template is found, an individual is identified. Otherwise, the person is reported as unidentified. This paper describes and explains in detail the entire process of developing Android mobile application for recognizing person's gender, age and face. Face detection and recognition methods that have been used are described and explained as well as development tools used in the development of Android mobile application. The software solution describes the details of using the OpenCV library and shows the actual results of the mobile application through the images.

- In {2} author Maliha Khan ,Sudeshna Chakraborty, Rani Astya and Shaveta Khepra - Face Detection and Recognition Using OpenCV. Face detection and picture or video recognition is a popular subject of research on biometrics. Face recognition in a real-time setting has an exciting area and a rapidly growing challenge. Framework for the use of face recognition application authentication. This proposes the PCA (Principal Component Analysis) facial recognition system. The key component analysis (PCA) is a statistical method under the broad heading of factor analysis. The aim of the PCA is to reduce the large amount of data storage to the size of the feature space that is required to represent the data economically. The wide 1- D pixel vector made of the 2-D face picture in compact main elements of the space function is designed for facial recognition by the PCA. This is called a projection of self- space. The proper space is determined with the identification of the covariance matrix's own vectors, which are centered on a collection of fingerprint images. We build a camera-based real-time face recognition system and set an algorithm by developing programming on OpenCV, Haar Cascade, Eigenface, Fisher Face, LBPH, and Python.
- In {3} author Sadia Shamma and Md. Yusuf Sarwar Uddin - Towards Privacy-aware Photo Sharing using Mobile Phones. Mobile phones are used these days to capture photos almost everyday everywhere. When photos are taken and shared among peers through social network sites or photo sharing portals, sometimes they pose threats to personal privacy of persons who appear in those photos, particularly when the person being photographed has reservation about sharing the same. In general, photos containing detectable human faces would be handled with care. In this paper, we propose techniques and develop a mobile app that can be used as an assistant tool in order to make people aware of their photo content. The app, integrated as a part of phone's builtin Camera app, categorically detects faces in an image preview and notify the user about detected faces (if any). The user then uses his/her rightful discretion to share or store the captured picture being respectful that no one's privacy is violated through this capture. Two possible techniques for detecting faces, namely cloud based and in-phone processing based, are proposed and a few experimental results with the app have been reported.
- In {4} author Chuyang Li ,Kun Li,Xin Zheng and Rui Qiu - Perfect Group Photo Synthesis. In a group photo, individual facial expressions can fatally affect the quality of the whole photo. However, it is a laborious task for most people to synthesize a perfect group photo using current photo editing software. To solve this problem, an automatic perfect group photo synthesis algorithm is proposed in this paper by judging facial expressions and replacing faces. This algorithm proceeds in four steps. First, faces in group photos are recognized and saved. Then, by evaluating facial expressions for each person, one face with the best expression is selected. Finally, a final synthesizing group photo is produced by color transferring and image completing. Experimental results prove that this algorithm is effective and can be used to synthesize better group photos automatically.

III. PROPOSED SYSTEM

The photo sharing system should provide a variety of functions for users to share photos easily and flexibly, allowing them to manage the photos, and to share photos with other users. It should also provide a variety of operations to easily create and manage their own albums.

In this paper we introduce a new application for photo sharing. The photo sharing system should provide a variety of functions for users to share photos easily and flexibly, allowing them to manage the photos, and to share photos with other users. It should also provide a variety of operations to easily create and manage their own albums. In this we can give username and email as input and generate the user id from it and store all information into the database. Then every time at a time of login check the user id and email with the database. If the information get match, then it is authorized user, and they have access for required resources. If information didn't match, then they don't have any access.

A. 1. SYSTEM ARCHITECTURE

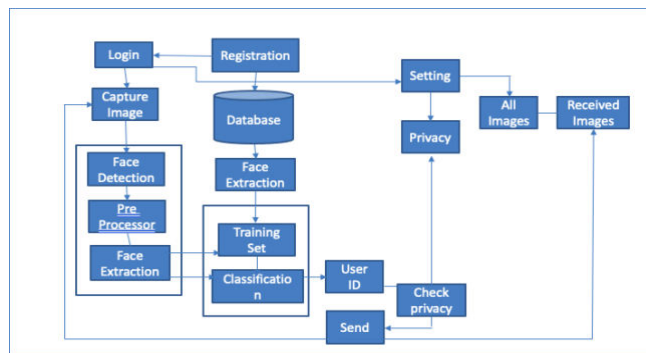


Fig 1- The proposed System model architecture

IV. MODULE

Authentication Module:

An authentication module is a plug-in that collects user information such as a user ID and password and compares the information against entries in a database. If a user provides information that meets the authentication criteria, then the user is validate and as per the appropriate policy configuration user has granted access to the requested resource. If the user provides information didn't match with the authentication criteria, then the user is not validated and denied access to the requested resource.

2. FLOW DIAGRAM

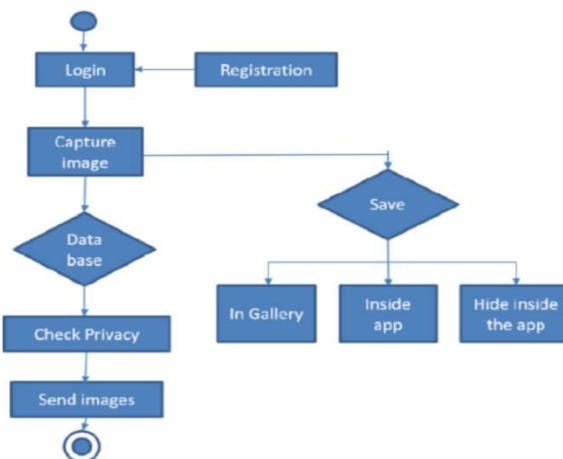


Fig.2. Flow Diagram

Gallery Module:

The Gallery Module is used to display a gallery of images from either App’s Gallery or Phone’s Gallery. Depending on what happens when users click on a module, you can use the Gallery module to display the series of photos one by one. If you click on a single photo, then it displays the full-size image on a page.

Authority Module:

Authority is very important for giving permission for cut, copy, paste and delete photos and also who can see that photos. With a particular authority photo can send automatically to the user gallery.

V. ALGORITHM

Step 1. Face Detection –

It scans the image or capture Image until it identifies a face. Before matching a face with name, the system checks the image is a face to identify which part of the image contains a face.

Step 2. Face analysis-

It locks on a face, analyses the features.

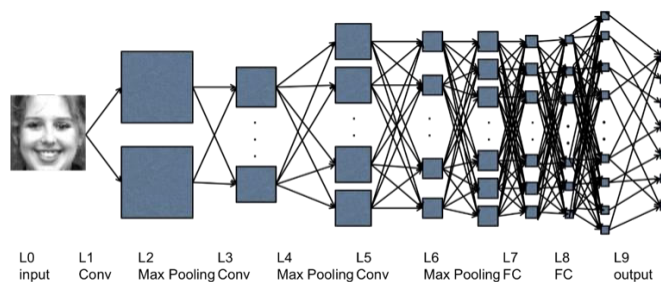
Step 3. Data matching-

For this we are using TensorFlow, TensorFlow is an open- source software library for numerical computation using data flow graphs. It is a system that transfers complex data structures to artificial neural networks for analysis and processing. It can be used in many areas of deep learning such as speech recognition and image recognition.

● Convolution neural network model

CNN Face Classification takes input as a image, then it will process it and classify into the different categories which is stored in our dataset. Our Dataset Contain face of all register user. Where Label Is user id of each person on our Application.

The hidden layer of CNN consists Convolutional layer, Activation Function (ReLu, Sigmoid & any other), pooling layers, fully connected layers and normalization layers



This deep learning model interprets the features and finds a match, provided the face exists in the database and return its faceid.

Then convert TensorFlow file(.pb) into TensorFlow lite file(.tflite). You can use this tflite file into your android and ios phone.

I. OUTCOMES:

- The detected face_id is an userid of each person in an application and hence image is share to those respective users using their userid with all privacy and security.
- The privacy given by the user have control over the sending photos. So photos will send as per authority
- The Receiver has option to save only those photos in gallery or hide it inside the app

VI. CONCLUSION

Finally conclude, image is an input to the deep neural network which detect face of each user and check images in dataset. This dataset is trained dataset which contain face of each user with their face name and unique face id, this id is used to send images to that individual account. Image sharing is next process that share image to respective user using their id. Images are sent to the user with some privacy. At the receiver end this image is downloaded by user in their gallery.

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