

Image Summarization for Recognition of Image Using Image Processing

Trupti Prabhu, Siddesh Soni, Aniruddha Palsodkar

Abstract— with the rapid advancement in technology it is easy to take pictures, and easier still to share them with the world at large. As a result, in a collection of images we end up having recurring and similar images which we would like to omit. Manually going through such a huge collection and picking out the required images is a highly laborious task. Traditional approach like the google photos and other image summarization techniques does not provide enough information about the image and only does the segregation of the image. Our aim is to develop a system with which will summarize the image according to different individual as well as provide personal details along with it. Through this paper we would like to develop a system in which the user will get the exact information of the particular person if image is input into the system. Using different image summarization algorithms we would segregate the image based and provide information about it.

Index Terms— OpenCV, Image Processing, Image Recognition, Image Detection, Image Summarization.

1 INTRODUCTION

Image processing is a method to convert an image into digital form and perform some operations on it, in order to get an enhanced image or to extract some useful information from it. It is a type of signal dispensation in which input is image, like video frame or photograph and output may be image or characteristics associated with that image. Image processing basically includes the following three steps. 1) Importing the image with optical scanner or by digital photography. 2) Analyzing and manipulating the image which includes data compression and image enhancement and spotting patterns that are not to human eyes like satellite photographs. 3) Output is the last stage in which result can be altered image or report that is based on image analysis

1.1 Overview

We have google photos where a tag is given to a person and when you type that person's name all his images will appear on the screen. There are different tags such as people, animal, place and things. But, the system only segregates images according to different people and does not provide any additional personal information regarding a particular person.

The main aim of the system is that the existing system for image summarization does not provide enough information we want. Thus, a system more advanced from the existing image summarization system needs to be developed in which the information i.e. detail information regarding the person should be developed. We create the database to store the personal information & one image so

that when user enters any image without any hassle the system will provide the information when the user gives his input image. The only input to the system is the images captured by the camera or the images directly given to the system. These images will be matched with the images from database and trigger the appropriate function. The users need to save the one image and data before using the system. When the system will start the camera will track and it will be stored in the system. As the tracking will be real time the system should be faster enough, so will be using the Viola and Jones detection algorithm. At the same time image recognition should be done at the faster speed so we will be using image recognition algorithm.

2 GENERAL SYSTEM DESCRIPTION

The system is comprised of different hardware parts: camera, projector and computing device. The camera will capture the image of the user and the physical world and send it to the computing device for pre-processing. The projector can project the images and other information to any plane surface, so that users can enjoy it with bigger screen. The computing device like mobile phone can process the gesture send by camera and trigger the event assigned to the gesture. The computing device is connected with the other components wirelessly.

In the existing system the users has to wear the color markers on t

3 DATA COLLECTION AND METHODOLOGY

For this system, the data will be stored in the Image Database which will contain stored images along with the information regarding the person. When the user will login in the system & upload an image then with the help of Viola Jones algorithm the system will detect if the image is a human image or not. After the detection of image the next algorithm i.e the image recognition algorithm will recognize the image & extract all the information which is stored in

- Trupti Prabhu is currently pursuing Bachelor's degree program in Information Technology engineering in Mumbai University, India. E-mail: tiruprabhu@gmail.com
- Siddesh Soni is currently pursuing Bachelor's degree program in Information Technology engineering in Mumbai University, India. E-mail: sonisiddesh@gmail.com
- Aniruddha Palsodkar is Assistant Professor in college in Mumbai University, India. E-mail: palsodkar12@rediffmail.com

the database & present it in the organized format.



4 TOOLS TO USE

The main tools required for the project are “Visual Studio”, “Xampp”.

4.1 Visual Studio:

Microsoft Visual studio is the IDE used to develop computer programs. Visual studio supports 36 different programming languages and allows the code editor and debugger to support nearly any programming language whose services exists. In our project we will be using the C++ language along with the OPENCV technology which is mainly used for computer vision and Image processing work. It provides wrapper classed to use in C++ language.

4.2 Xampp:

Xampp is a free and open source cross platform web server solution stack package. The software can create the server on your local machine. It can also create the MYSQL database locally on the system. We will need the database to store and distinguish the gestures of different users. As Xampp is easy to install and use, we will use it to store our gestures in the database.

5 FLOW OF WORKING

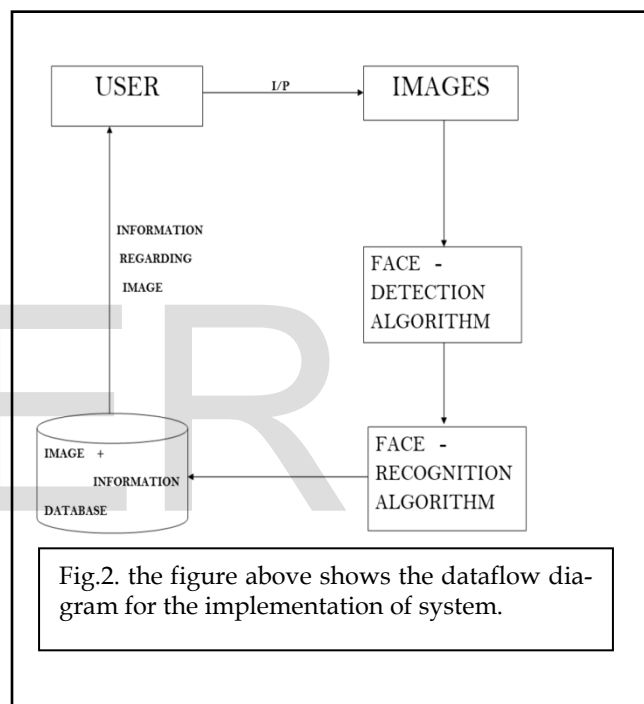
This system will consists of following three layers:-

1. Image Detection Layer
2. Image Recognition Layer
3. Database

The system will work in following manner. First the user will give input to the system which will be an image. We are going to use image detection algorithm i.e **Viola and Jones Algorithm** to detect the image which will be given to the system and to recognize the image ,we are going to use image recognition algorithm i.e **PCA algorithm (Principle component analysis)**.

We will attach a Database which will contain stored images along with the information regarding the person. We will then compare the input image given to the system with the images available in the database and then the system will give the user the best possible result with maximum accuracy.

5.1 Dataflow Diagram



6 CONCLUSION

Though it is necessary to implement the proper working system, but we can conclude that with the help of the real time finger tracking and gesture recognition system it is possible to build the 6th sense technology. The new system will be markerless finger tracking system and will be more easy to use and will give more freedom to the human computer interaction.

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