Security System with Face and Liveness Detection

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Abstract: *Face is one of the easiest ways to differentiate each other's identities. Facial recognition is a personal identification system that uses the personal characteristics of someone to identify who you are. The process of recognizing a person's face is basically it consists of two stages, namely facial recognition, in which this process occurs most frequently immediately to humans, except under circumstances where the object is available in a short period of time far, next is an introduction, which recognizes faces as individuals. Stage then it is repeated and developed as a model for face image recognition (face recognition) is one of the most widely studied biometric technologies and developed by experts. There are two types of currently popular methods of advanced facial recognition pattern namely, Eigen face method and Fisher face method. We use fisher face a monitoring method to verify any system. The location of this project is facing image processing system. The software requirements for this project are an anaconda.*

Keywords: Face Detection, Machine Learning, Face Recognition, Image Processing

I. INTRODUCTION

Decades ago, Biometrics emerged as a solid solution automatic human recognition. Among the main biometric features, the face is one of the simplest since their capture. It does not require much user interaction with the camera sis available almost everywhere, including once cell phones. Currently, advanced methods of facial recognition as well authentication is based on Convolutional Neural Networks(CNN), deep neural networks are internally promoted the functioning of the human brain, which produced great accuracy results from many complex works involving photography. CNN had it used for face recognition and various verifications systems, inclusive and commercial. According to, financial institutions must be effective and reliable way store assure their customers. An effective verification system should protect customer data, to prevent money laundering and terrorist financing, to reduce fraud, documents (13,501articles) taken from programs.

II. MOTIVATION

1. The main motivation for the program is point to user.
2. Provides limited user access time using facial recognition.
3. Used to detect an unauthorized user.
4. Life discovery has been a major research topic in the recognition of fingerprints and iris recognition communities in recent years.

III. LITERATURE SURVEY

Sr. No.	Title	Authors	Methodology
1	Cross-Domain Face Matching for Real Banking System	Johnton Oliveira, Anderson R. Rocha	In this research paper authors summarized the current methods of face recognition, feature extraction nomalization of data.
2	Bank Locker Security System using ML with face and liveliness detection	Yogesh Jadhav, Nitin More, Pooja Nimbalkar	In this paper authors explained what is need of liveliness detection in face recognition and how it will be implemented.
3	Face Recognition using Machine Learning	Arun Alvapillai, Peter Neal Barrina	In this paper authors proposed a facial recognition system using machine learning, specifically support vector machines (SVM).

IV. BLOCK DIAGRAM
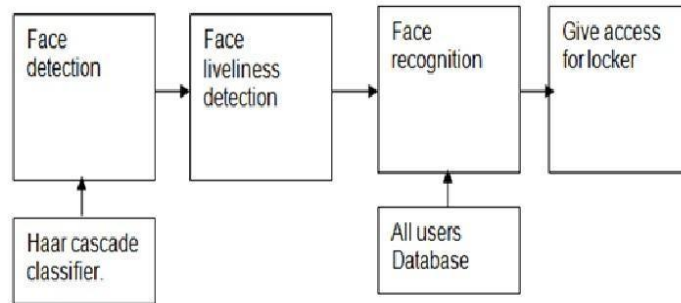
V. PROPOSED SYSTEM
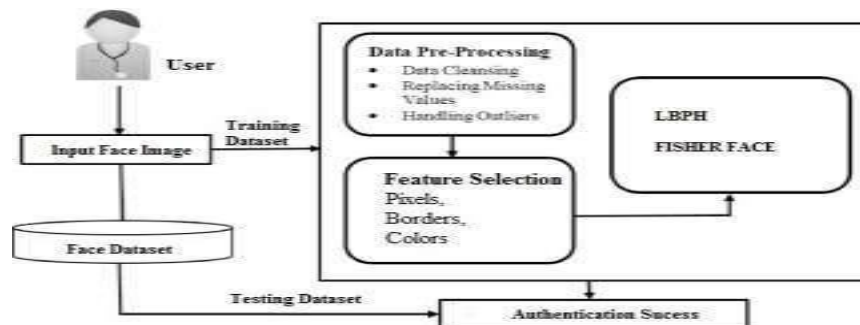
VI. SYSTEM ARCHITECTURE

- Face taken from the website is required to upload to our workspace.
- We will upload pictures of the train to that.
- Now we need to separate each data once every one in data testing and training.
- We need to get acute and greyscale pictures.
- Now training datasets are issued with image features and are saved by counting.

6.1 Mathematical Model

It should be a closed system defined as, S ={Ip , Op, A, Ss, Su, Fi}

Where, Ip = Input Set, Op =Output Collection, Su=Success Status, Fi=Failure Status and A=Activity Collection, Ss=Set of user conditions.

Input Set=Ip={username, password, Face image, banking details}

Verb set=A= {F1, F2, F3, F4, F5, F6}

Where, F1=User authentication

F2=Capture and pre-process the image

F3=Face detection

F4=Face detection

F5=Verification Process

F6=Bank details are verified

User Profile Collection=Ss = {login status, see face, see, for unauthorized access, verify}

Exit set=Op= {authorizations, alerts}

Su=Success Status= {Success entry, photography, face detection, alerts}

Fi=Failure Status= {Login failed, camera failure}

Collection Variations=Ex= {Null Pointer Exception, Null Values Exception, Connection Exception}

VII. METHODOLOGY

- Detect faces in each frame generated by the webcam.
- For each detected face, detect eyes.
- Detect live lines of the face i.e. eyes are blinking or not.
- Recognize face and access the respected locker of the user.

VIII. CONCLUSION

Camera photography and use face recognition techniques and recognition can be reduced handicraft from people and increase safety, decision making in this recognition result. Based on this facial recognition and vision can be used using multiple applications as automatic authentication system based on face recognition.

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