Secured Amount Transaction System Based On Facial Recognition Using Open CV

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Abstract

Cash Less Transaction plays a vital role in this era. There are various methods to transfer money, purchase goods, pay bills and there are many supported apps and website to do such Transaction either by contact or contact less amount transfer. Credit card, QR Scan, Debit card Transactions plays vital role but we tend to miss the Card or Forget the PIN or may tend to Lost the cards. But In case of Online transaction or contactless transaction digital fraudulent and hackers make such Transaction difficult by phishing, card cloning, OTP bypass and fishing. Hence to secure and to protect the Transaction we propose an idea to make such amount transaction easier, secured and more compatible through Facial Recognition System. As Face plays an important role in security where it is highly difficult to spoof and provide a fast and accurate matches by considering various factors such as location of eyes, eyebrows, ears, nose, chin and mouth. SoIn this paper we propose an idea to transact an amount by facial recognition system which uses facial features snatched from a detecting face when transferring an amount that stores in the database and compares the mapped facial features against a database of existing known faces and attempt to transact the money only if it is matched. If not the Transaction declined and amount will be secured. Hence by this proposed system by facial Recognition we can protect the amount from Fraudulent and can secure it.

Keywords:Facial Recognition, OpenCV, Transaction, Haar cascade Algorithm

1. INTRODUCTION

Technology has been improvised in various sectors according to the growth of technology improvisation many inventions are in the place to renovate the existing system. Once people use to buy products only through barter system, later metal coins then cash exchange where in place. But now Online Transaction made life simpler either by Cashless or Card less. Technology has improvised a lot in the digital sector. Technology has been improvised in various sectors according to the growth of technology improvisation many inventions are in the place to renovate the existing system. Once people use to buy products only through barter system, later metal coins then cash exchange where in place. But now Online Transaction made life simpler either by Cashless or Card less. Technology has improvised a lot in the digital sector.

The process of buying and selling has become a major source and Transaction or Payment plays a very vital role in the world now. Past few decades, the use of technology in many business sectors is enamors to satisfy the customer requirements. Especially in Banking and in finance sector very true. Facial recognition is revolutionary technique over touch type based interactions with convenience and offering services without security compromisation. So, we propose an idea to make the transaction more secured, easier and more compatible through Facial recognition System.

Transaction make life simpler, even though Card payment are easier, we tend to miss the card or forget the pin at times even contact less credit card/debit card payment make life much more easier but digital fraud and hacking are in place to make the payment difficult. To make such transaction more secured we can bring

forth the Facial Recognition technology in the money transaction sector because of its necessity and uniqueness, it is most widely accepted method without compromisation in security concern. The new domain of facial based detection gained big attention of many scientist and researchers, and hence it has standard benchmark in human recognition area.

1.1 RELATED WORKS:
BIOMETRIC FACE RECOGNITION PAYMENT SYSTEM:

In this paper, we have referred the Payments made through Face Recognition instead of carrying all digital cards and memorizing the PIN and Password it gives a simple solution but even more secure solution to protect the payment happening across the world. This system is mainly for face recognition by finding the assistance of Eigen and using Euclidean. Account verification using face once the authorized person's face is verified then the account is ready for the transaction. In case of any unrecognised person tries to access the account face recognition module denied the transaction

CREDIT CARD TRANSACTION BASED ON FACE RECOGNITION TECHNOLOGY:

This system proposed a Facial Transaction made when it is paying an amount using Credit card in the Shopping mall. It uses a GLCM Algorithmic rule where the Facial Data are uploaded and stored in the database as a vector image, then it use to recognise the person when they tries to pay the amount through credit card. During Transaction it use to authenticate the uploaded image and tries to recognise the face. Generally users are authenticated by matching the features of images stored in the database the image stored by the administrator.

2. PROBLEM STATEMENT

Many banking sector still relaying conventional method for transaction like passwords and OTP. Basically people generate their password based in what they know. For the hackers it's sometime very easy to guess users password with little assupmptions. Another major flaw is that people can have too many passwords e.g. for social media accounts, emails, and for other social media related sites.

Also, if the user try to creating complex passwords and if suppose they forget and when they need to transaction using the password they are in position to gone through many troubles like need to generate temporary code via email to reset it,here again there is a possibility for hacking their inbox. These all the above said problems can be eliminated using the proposed technique. The transaction is not only based on the OTP or password. Using facial features banking customer can transact their bank works.

First, Haar cascade based algorithm has been applied for fast and simple face detection from the input image. The face image is then being converted into grayscale image. After that, the iris, eyebrows, noses, mouth of candidates are extracted from the intensity valleys from the detected face.

3. EXISTING SYSTEM:

In the Existing System, the Payment or Transactions are made by the Facial Recognition that detects the uploaded face authenticate it and recognise it with a deep learning or machine learning algorithm to reduce the noises and to profound the activity further. Some systems upload the image of the person then remove the noise to transact an amount, but it fails at times to recognise the vector of images and to precede the transaction. In some existing module, the transaction fails as the face is not recognised properly and there is no other option to proceed the transaction and even there is no proper database maintained for the transaction summary or failed attempts notifications in case of security aspects. One of the Transactionmodulesfailed as the Face captured were mismatched with many images and it went as a failure attempt.

4. PROPOSED SYSTEM:

The main aim of the propose system is to Provide a secure amount transaction in Banking sector using Facial recognition system. As face is the major recognition part in human body, where the detecting and analysing points vary from person to person, hence we use Facial recognition as a secure mode to authenticate and recognise it and use in a transaction aspects. In this system, we use to capture the image during registration phase convert into a grey scale image by removing the noises by only detecting the face and storing in a database. During transaction phase the camera authenticate to check the face is matched with the registered face, if it's matched the transaction continues, else it denies and sent a notification to the mail. In case of emergency and safety purpose we extend a module, to transact via PIN and sends the transaction summary to the registered email. Thus the main aim is to provide a security to the amount during Transaction.

1. SYSTEM ARCHITECTURE:
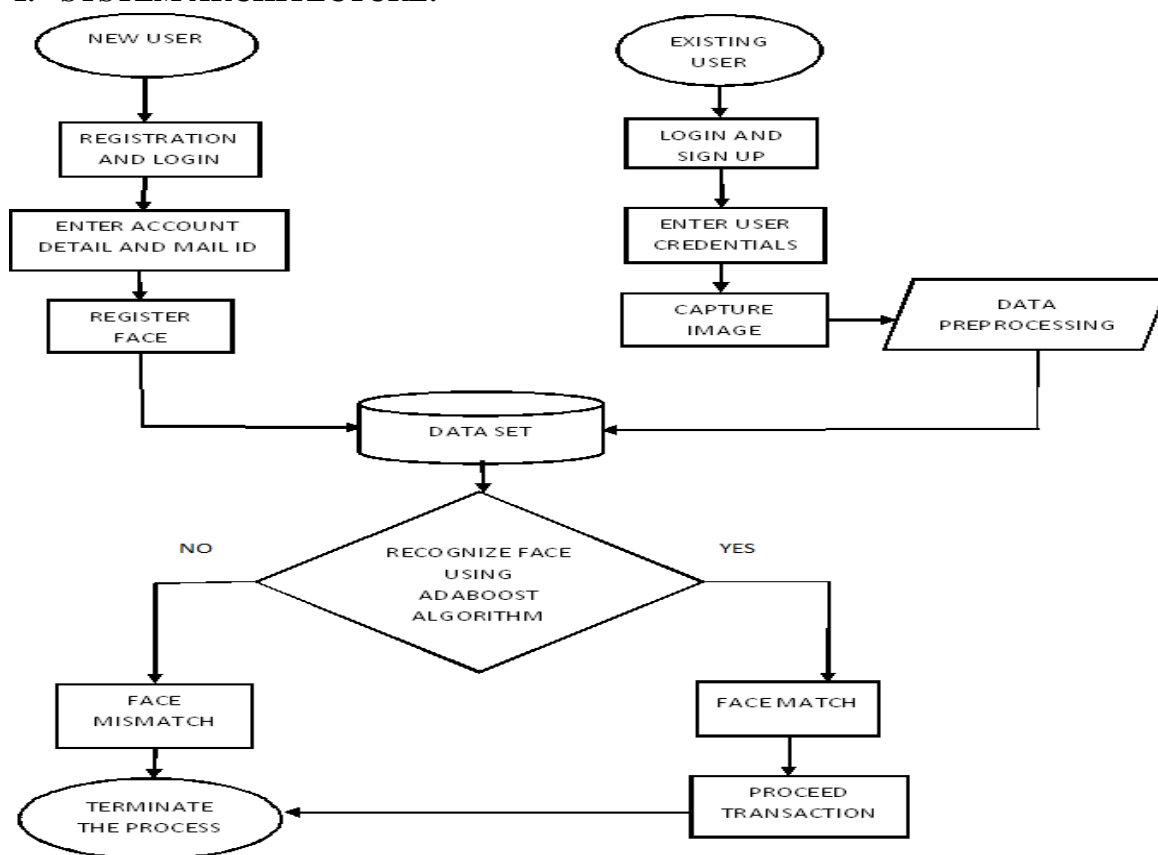
In the above mentioned diagram, The system works as two module the first face of the module is registration, if we are the then login to the next page which is user account details. The account number will send to mail ID after registration. After we receive our account number our face will be registered and saved in database new user for amount transaction process we need to register our details first and. Our face is detected using Haar Cascade algorithm and we use Adaboost Algorithm, to classify and analyse faster where eyebrow, nose tip, and eye are detected. In the second phase, If we are an Existing user we can directly login and sign up our data. Enter the required credentials and after entering it will authenticate our face and checks in the database and use a Haar Cascade algorithm to classify, analyse faster. If it's matched the transaction continues else it denies and sent the notification to the registered email id. In case of emergency and safety purpose we extend a module, to transact via PIN and it sends the transaction summary to the registered email.

6.MODULES

6.1.1 Registration Module

6.1.2 Face Recognition Module
6.1.3 Transaction Module

6.1.1 Registration Module

Registration Module is the First module in the Project, To Transact amount, we need to register our User Account Credential Details likes name, Password, email address, phone no and PIN. Then the account number will be generated in Mail. After displaying the account number, the camera opens to register our face.

```
Enter your name: jaipriya
Enter password12345
Enter your Email Address: jaipriyapandian@gamil.com
Enter your phone No: 9898989891
Set your pin...
Enter your PIN: 0909
Register successfully and here is your AccNO:  9434151494417222
```
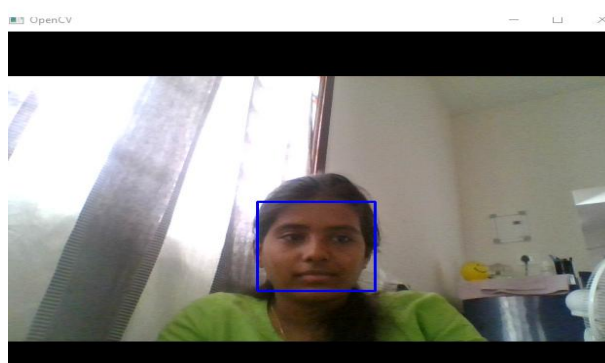

Fig 5 : Registration

6.1.2 Face Recognition Module

After successful registration, we can log in with our credentials to transfer amount. Need to enter From Account number and To account number. After entering it display either Face or Pin. If you select Face the camera opens and authenticate the stored image from the database, By using Adaboost Algorithm the face will be detected by sorting noises and matches with Database.

6.1.3 Transaction Module

In Transaction Module, If the Face is matched successfully the transaction will happen and will let us know the balance amount. If the face is not match the Transaction Declines and sent us the alert. For an emergency purpose we can use PIN to Login.

```
Enter user name: jaipriya
Enter password: 12345
Enter account No: 9434151494417222
('jaipriya', '12345', 'jaipriyapandian@gamil.com', '9898989891', '9434151494417222', '1000', '0909')
would you like to transact the money: y
From account no: 9434151494417222
To account no: 7878790980023421
receipient name: adhi
Amount: 100
Would you like to proceed with authentication via (face or pin): face
Recognizing Face Please Be in sufficient Lights...
transaction done!

your current Balance:  ('900',)
```

```
Enter user name: Ashwanth Kumar
Enter password: 8080
Enter account No: 4318195411834449
('Ashwanth Kumar', '8080', 'jaipriyapandian@gmail.com', '7598692937', '4318195411834449', '500', '9090')
would you like to transact the money: y
From account no: 4318195411834449
To account no: 4318195411834441
receipient name: jai
Amount: 500
Would you like to proceed with authentication via (face or pin): face
Recognizing Face Please Be in sufficient Lights...
transaction done!

your current Balance:  ('0',)
```

Fig 6 : Transaction Module

7. CONCLUSION:

Thus this exploration of work mainly designed for reducing the fraudulent attempt during online payment transaction. Here there is no need of any special hardware for installation. The entire system requires only the computer and camera for construction. The entire system is very reliable and efficient for online mode transaction process which is more secure and transaction is achieved by facial recognition. Either cashless or card less the transaction can be done by an individual without using the card and the password anymore. Single show up of face is more than enough to transact and it's easy to use and more feasible. Hence the required output is achieved by the proposed system. This system helps everyone with less details to fill and easy to use.

8. FUTURE WORKS:

As the Proposed system is achieved successfully, but sometime a larger dataset of images requires a lot of time to sync and to verify. So, as a future scope we are planning to make the transaction quick by making the sync issue lower and perform the transaction qicker. Even we are planning to make it with the real time application to bring forth in industry where transaction takes place instantly and even to merge up with Bank sector to understand our feasibility of the work. Hence we are planning to attain the system more secure, more easier and most simple to transact an amount with trust.

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