Fraud Detection In Banking Using Key Agreement And Face Authentication

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Abstract- *Nowadays, online payments are concerned about security. This is mainly due to hacking of OTPs or PIN codes by the hackers. This paper proposes a method for credit card system used in transaction system which will integrate with the face detection. The problem faced by credit card users is lot of privacy issues. This may commonly occur when users give their credit card numbers to unfamiliar individuals or when cards are lost. Our solution proposes a technique by which the image clicked by using webcam during the registration process image captured detect the face and with feature extraction face stored into the database. When user login the shopping portal that time system check previous transaction through IP address or mac address if they found the address then process further other wise system discard the transaction. At the time of payment made by the user on E-commerce portal will be compared to the features from the dataset of the respective user and also process the two step verification process. Face Features extracted from the images stored in administrator main database. Our goal is to compare the similarity of faces embedded in the credit card and respective user.*

Keywords- Webcam, Transaction, Verification, Two Step Verification, Mac address, OTP, Face recognize, Image Processing, etc.

I. INTRODUCTION

In this Paper Facial create variation is one among the main factors making face recognition (FR) a difficult task. One standard solution is to convert non-frontal faces to frontal ones on that FR is performed. Rotating faces causes facial picture element price changes. Therefore, existing CNN-based ways learn to size frontal faces in color house. However, this learning drawback in an exceedingly color house is very non-linear, inflicting the artificial frontal faces to lose fine facial textures. during this paper, we tend to take the view that the non frontal-frontal picture element changes area unit basically caused by geometric transformations (rotation, translation, and so on) in house. Therefore, we tend to aim to find out the non frontal-frontal facial conversion within the spatial domain instead of the color domain to ease the training task. To the current finish, we tend to propose associate degree appearance-flow-based face formalization convolutional neural network(A3F-CNN). Specifically, A3F-CNN learns to determine the dense correspondence between the non-frontal and frontal faces. Once the correspondence is constructed, frontal faces area unit sized by expressly "moving" pixels from the non-front alone. In this way, the artificial frontal faces will preserve fine facial textures. To improve the convergence of coaching, associate degree appearance-flow guided learning strategy is planned. Additionally, generative adversarial network loss is applied to attain a lot of photo realistic face, and a face mirroring technique is introduced to handle the self-occlusion drawback. in depth experiments area unit conducted on face synthesis and create invariant atomic number 87. Results show that our technique will synthesize a lot of photo realistic faces than the existing ways in each the controlled and uncontrolled delighting environments. Moreover, we tend to reach aawfully competitive FR performance on the Multi-PIE, LFW and IJB-A databases.

II. LITERATURE REVIEW

1.Sorournejad, Zahra Zojaji, Reza Ebrahimi Atani, Amir Hassan Monadjemi, "A Survey of Credit Card Fraud Detection Techniques: Data and Technique Oriented Perspective".

Credit card plays a very important rule in today's economy. It becomes an unavoidable part of household, business and global activities. Although using credit cards provides enormous benefits when used carefully and responsibly, significant credit and financial damages may be caused by fraudulent activities. Many techniques have been proposed to confront the growth in credit card fraud. However, all of these techniques have the same goal of avoiding the credit card fraud; each one has its own drawbacks, advantages and characteristics. In this paper, after investigating difficulties of credit card fraud detection, we seek to review the state of the art in credit card fraud detection techniques, datasets and evaluation criteria.The advantages and disadvantages of fraud detection methods are enumerated and compared. Furthermore, a classification of mentioned

techniques into two main fraud detection approaches, namely, misuses (supervised) and anomaly detection (unsupervised) is presented. Again, a classification of techniques is proposed based on capability to process the numerical and categorical datasets. Different datasets used in literature are then described and grouped into real and synthesized data and the effective and common attributes are extracted for further usage. Moreover, evaluation employed criterion's in literature are collected and discussed. Consequently, open issues for credit card fraud detection are explained as guidelines for new researchers.

2. V. Bhusari1, S. Patil, "Application of Hidden Markov Model in Credit Card Fraud Detection".

In modern retail market environment, electronic commerce has rapidly gained a lot of attention and also provides instantaneous transactions. In electronic commerce, credit card has become the most important means of payment due to fast development in information technology around the world. As the usage of credit card increases in the last decade, rate of fraudulent practices is also increasing every year. Existing fraud detection system may not be so much capable to reduce fraud transaction rate. Improvement in fraud detection practices has become essential to maintain existence of payment system. In this paper, we show how Hidden Markov Model (HMM) is used to detect credit card fraud transaction with low false alarm. An HMM based system is initially studied spending profile of the card holder and followed by checking an incoming transaction against spending behavior of the card holder, if it is not accepted by our proposed HMM with sufficient probability, then it would be a fraudulent transaction.

3.Changjun Jiang, Jiahui Song, Guanjun Liu, "Credit Card Fraud Detection: A Novel Approach Using Aggregation Strategy and Feedback Mechanism".

With the rapid development of electronic commerce, the number of transactions by credit cards are increasing rapidly. As online shopping becomes the most popular transaction mode, cases of trans-action fraud are also increasing. In this paper, we propose a novel fraud detection method that composes of four stages. To enrich a card holder's behavioral patterns, we first utilize the cardholders' historical transaction data to divide all cardholders into different groups such that the transaction behaviors of the members in the same group are similar. We thus propose a window-sliding strategy to aggregate the transactions in each group. Next, we extract a collection of specific behavioral patterns for each cardholder based on the aggregated transactions and the card holder's historical transactions. Then we train a set of classifiers for

each group on the base of all behavioral patterns. Finally, we use the classifier set to detect fraud online and if a new transaction is fraudulent, a feedback mechanism is taken in the detection process in order to solve the problem of concept drift. The results of our experiments show that our approach is better than others.

4. S. G. Fashoto, O. Owolabi, O. Adeleye, and J. Wandera, "Hybrid methods for credit card fraud detection using K-means clustering with hidden Markov model and multi-layer perception algorithm".

The use of credit cards is fast becoming the most efficient and stress free way of purchasing goods and services; as it can be used both physically and online. Hence, it has become imperative that find a solution to the problem of credit card information security and also a method to detect fraudulent credit card transactions. Over the years, a number of Data Mining techniques have been applied in the area of credit card fraud detection. The focus of this paper is to model a fraud detection system that would attempt to maximally detect credit card fraud by generating clusters and analyzing the clusters generated by the dataset for anomalies. The major objective of this study is to compare the performance of two hybrid approaches in terms of the detection accuracy.

5. V´eronique Van Vlasselaera, Cristi´an Bravob, Olivier Caelenc, Tina Eliassi-Radd, Le man Akoglue, Monique Snoecka, Bart Baesensa, "APATE: A Novel Approachfor Automated Credit Card Transaction Fraud Detection using Network-Extensions".

In last decade, the ease of online payment has opened up many new opportunities for e-commerce, lowering the geographical boundaries for retail. While e-commerce is still gaining popularity, it is also the playground of fraudsters who try to misuse the transparency of online purchases and the transfer of credit card records. This paper proposes APATE, a novel approach to detect fraudulent credit card transactions conducted in online stores. Our approach combines (1) intrinsic features derived from the characteristics of incoming transactions and the customer spending history using the fundamentals of RFM (Recency Frequency - Monetary); and (2) network-based features by exploiting the network of credit card holders and merchants and deriving a time-dependent suspiciousness score for each network object. Our results show that both intrinsic and network-based features are two strongly intertwined sides of the same picture. The combination of these two types of features leads to the best performing models which reach AUC-scores higher than 0.98..

III. RESULT ANALYSIS
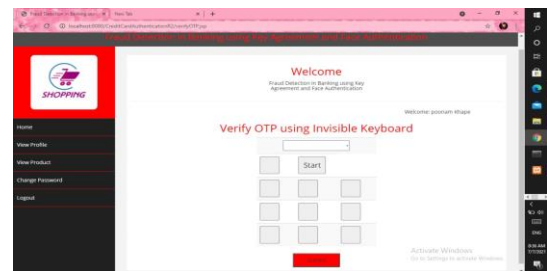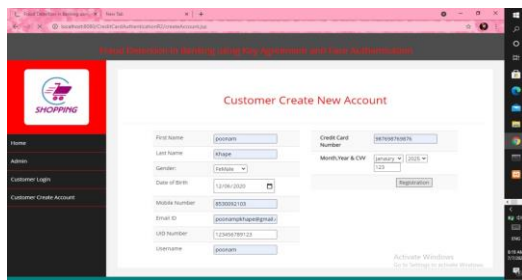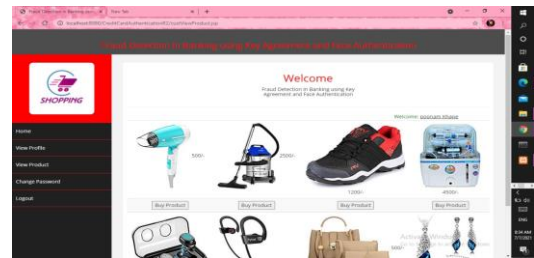
This system contains two modules:

1. Admin:

   This module first create user account with the help of user information and send account details to the user registered mobile number by text message.
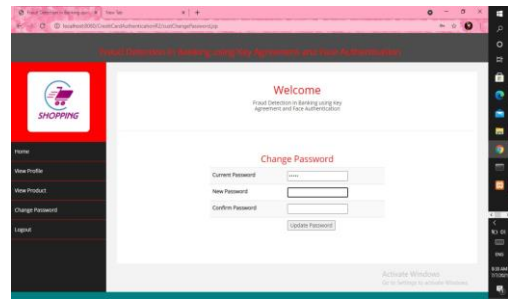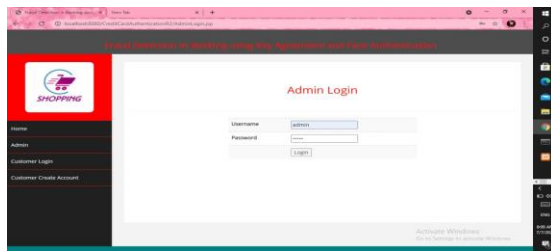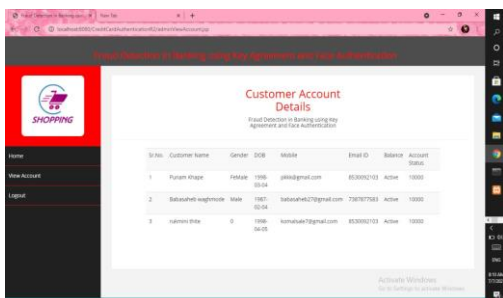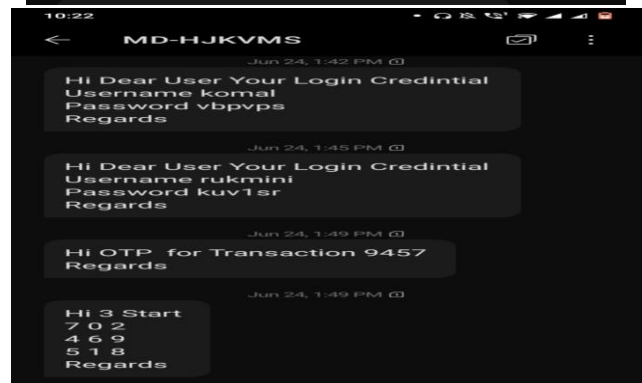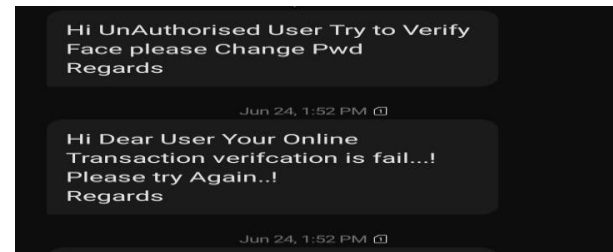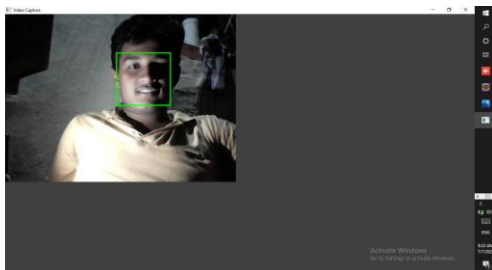

2. User:

Here user login his account do any type of transaction.

   If user register successfully .

IV. ADVANTAGES

1. It is more secure than previous work .
2. Faster than manual paper work process.
3. Two step security like key agreement and face authentication.

4. No need of extra hardware to capture face for identification purpose.
5. **Reliable and user friendly.**

V. APPLICATIONS

Proposed systems offer several Applications: –

*   Banking Sector.
*   Healthcare Sector.
*   Organizational Sector.

VI. ALGORITHMS

1. Viola Jones:

1. Set the minimum window size, and sliding step corresponding to that size.
2. For the chosen window size, slide the window vertically and horizontally with the same step. At each step, a set of N face recognition filters is applied. If one filter gives a positive answer, the face is detected in the current widow.
3. If the size of the window is the maximum size stop the procedure. Otherwise increase the size of the window and corresponding sliding step to the next chosen size and go to the step 2.

2. LBP:

1. Parameters: the LBPH uses 4 parameters: Radius Neighbors Grid X Grid Y.
2. Training the Algorithm.
3. Applying the LBP operation.
4. Extracting the Histograms.
5. Performing the face recognition.

VII. FUTURE WORK

*   Since we have proposed a modular approach we can improve different modules until we reach an acceptable identification and authentication rate. The comparison of the input image and the image stored in database should be fast and reliable enough.
*   The same project can be utilized for several security purpose applications where authentication is needed to access the privileges of the respective system. It can be used in recognizing and detecting guilty parties involving in unauthorized business. Face recognition and face detection algorithm can be improved with respect to the utilization of resources so that the project can recognize more number of faces at a time which can make the

system far better. Many variants of the project can be developed and utilized for home security and personal or organizational benefits.

VIII. CONCLUSION

Our proposed project has been designed for the purpose of reducing the credit card frauds that may occur during online payment transaction. There is no need of specialized hardware for installing this system. It just need a computer and a camera for construction. The system is reliable and efficient mode of transaction process. Purpose of Our proposed project on credit card authentication using face recognition is reducing credit card frauds that may occur during an online payment process. It should be flexible so that people can easily use it without any hesitation. The web cam plays an important role in the system. It is reliable and user friendly. Using this technique solve the issues by integrating face Recognition ,this system still lacks the ability to identify people with similar face. This problem is overcome by using OTP. The comparison of the real time image with the images stored in the database should be reliable.This system should not be made wait long time for a user.

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