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# SECURITY IN ONLINE BANKING SYSTEM USING AI

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**Abstract:** The issue of design and security is very predominant in any financial and business organization, especially such organization as a bank. Therefore, we intend to aid in security of the bank by bringing in an Artificial intelligence system that involves an individual to get an access to some items using face and voice recognition security system. This AI system is not just a normal password lock system that require a user to insert password and gain access to some items, it is a system that has an administrative authentication. In addition, with this kind of security authentication system we intend to implement, a highly secured AI feature, which enables the user with assured and highly secured transactions using their personal frame.

**Keywords:** Haar-Casacade algorithm, Machine learning, Face Detection, Voice Verification

## 1. INTRODUCTION:

In today's drastically developing society, the network and information technologies are redesigning and trendsetting the traditional business activities and asset circulation models. Mostly all the products and services are available online while other activities like business activities are involved in the online banking or online. Due to swift technological developments, traditional trading is being transformed into new trading. Online stores are fast rising based on the technologies of mobile, tablets and PCs along with the Internet of Things. Despite fast expanding E-banking trans-action volume, interviews, past year data shows that all the participants of online banking does not find themselves happy at electronic transactions and benefits from online banking.

### Motivation

E Live ness detection found that we can use face recognition, liveness technology and any other security systems can be used for many smart online banking systems. OpenCV technology with python programming language helps in this project.

### Objective

- Apply face authentication for the security
- To identify voice authentication
- To provide security through OTP Generation

### Purpose

1) Since our economy is heading towards being a cashless one, it is important to protect the information in our credit, debit and anyother card or service that enables transactions.

2) You can lose both time and money in case of a data breach. Although banks do everything in their hands to recover your money, sometimes it comes back either partially or even nothing at all.

## 2. LITERATURE REVIEW

Roman shvetsov, Natalia Efremova and Artem Kuharenko, NTechLab Leveraging large face recognition data for emotion classification. In this paper we describe a solution to our entry for the emotion recog- nition challenge EmotiW 2017. We propose anensemble of several models, which capture spatial and audio features from videos. Spatial features are captured by con-volutional neural networks, pretrained on large face recognition datasets.

Ran HE, Senior Member, Xiang Wu, Zhenan Sun **:** Wasserstein CNN Learning Invariant Features for NIR-VIS Face Recognition Heterogeneous face recognition (HFR) aims at matching facial images acquired from different sensing modalities with mission-critical applications in foren- sics, security and commercial sectors. However, HFR presents more challenging issues than traditional face recognition because of the large intra-class variation among heterogeneous face images and the limited availability of training samplesof cross-modality face image pairs

Yuxiang Zhou and Hongjun Ni Face and Gender Recognition System Based on Convolutional Neural Network. In the

  

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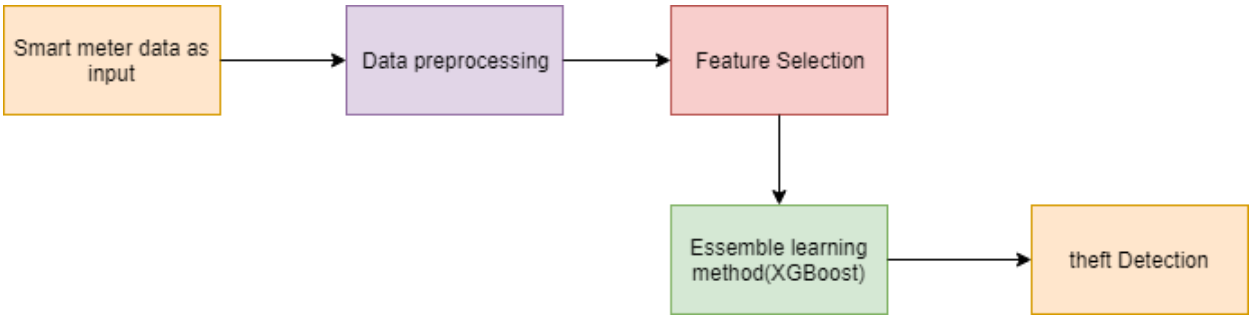
existing research, face features and gender attributes are sep-arated, resulting in face recognition errors and gender recognition errors in complex backgrounds. In this work, we propose the Face and Gender Recognition System that uses convolutional neural networks (CNN). In the gender recogni-tion module, we use the public dataset Adience to train CNN and improve the best recognition accuracy from 91.80.

## 3. WORKING OF PROPOSED SYSTEM

Mobile and online banking becomes one of the most important technologies that will not lose its popularity with new technology features added every day for the convenience of the user. Most of the financial companies offer mobile and online banking applications to their customers. Security, privacy and customer privacy in online and mobile banking have become important. Security risks in mobile and online banking, especially in mobile banking is a major problem for the banks and the users because of the innovations brought by the technology and security gaps in every innovation. The banking system offers various security solutions for mobile and online banking security. In this research paper, security threats and security measures in mobile and online banking systems are examined.

## 4. PROPOSED SYSTEM




– **Admin:** In this module, the admin has to log in by using valid user name and password. After login successful he can do some operations, such as View All Users and Authorize, View All E-Commerce Website and Authorize, View All Products and Reviews, View All Products Early Reviews, View All Keyword Search Details, View All Products Search Ratio, ViewAll Keyword Search Results, View All Product Review Rank Results.

– **View and Authorize Users:** In this module, the admin can view the list of users who all registered. In this, the admin can view the user's details such as, user name, email, address and admin authorize the users.

– **View Charts Results:** View All Products Search Ratio, View All Keyword Search Results, View All Product Review RankResults.

– **Ecommerce User:** In this module, there are n numbers of users are present. User should register before doing any operations. Once user registers, their details will be stored to the database. After registration successful, he has to login by using authorized user name and password Once Login is successful user will do some operations like Add Products, View All Products with reviews, View All Early Product's reviews, View All Purchased Transactions.

– **End User:** In this module, there are n numbers of users are present. User should register before doing any operations. Onceuser registers, their details will best or to the database. After registration successful, he has to login by using authorized username and password. Once Login is successful user will do some operations like Manage Account, Search Products by keyword and Purchase, View Your Search Transactions, View.

## 5. METHODOLOGY:

**Content Based filtering for keyword Python**: Python is commonly used for developing websites and software, task au- tomatoing,data analysis, and data visualization. Since it's relatively easy to learn, Python has been adopted by many nonprogrammers such as accountants and scien- tists, for a variety of everyday tasks, like organizing finances. Python is a general-purpose programming language, so it can be used for many things. Python is used for web development, AI, machine learning, operating systems, mobile application development, and video games Machine learning: Machine learning (ML) is a type of artificial intelligence (AI) that allows software applications to become more accurate at predicting outcomes without being explicitly programmed to do so. Machine learning algorithms use historical data as input to predict new output values. 37 Machine learning is used in internet search engines, email filters to sort out spam, websites to make personalized recommendations, banking software to detect unusual transactions, and lots of apps on our phones such as voice recognition.

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## 6. SOFTWARE INTERFACE

– **Anaconda:** Anaconda is a free and open-source distribution of the Python andR programming languages for scientific computing (data science, machine learningapplications, large-scale data processing, predictive analytics, etc.), that aims to simplify package management and deployment. The distribution includes data-science packages suitable for Windows, Linux, and macOS.

– **Spyder**: Spyder is a powerful scientific environment written in Python, for Python, and designed by and for scientists, engineers and data analysts. It offers a unique com- bination of the advanced editing, analysis, debugging, and profiling functionality of a comprehensive development tool with the data exploration, interactive execution, deep inspection, and beautiful visualization capabilities of a scientific package

.

## 7. ADVANTAGES AND DISADVANTAGS

– **ADVANTAGES**

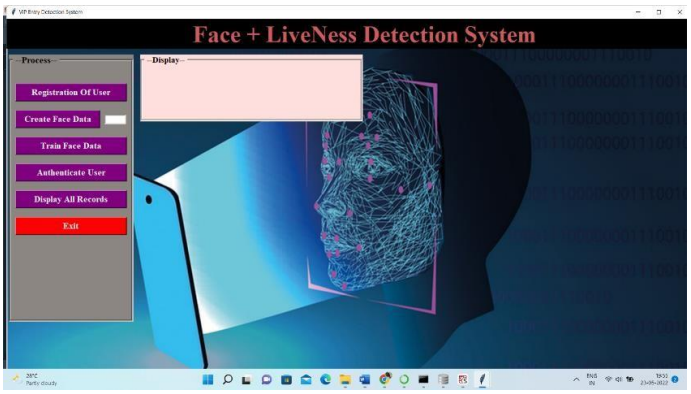
- improve the security of online finance
- track the loopholes in their systems
- minimize risks
- AI along with machine learning can easily identify fraudulent activities andalert customers as well as banks

– **DISADVANTAGES**

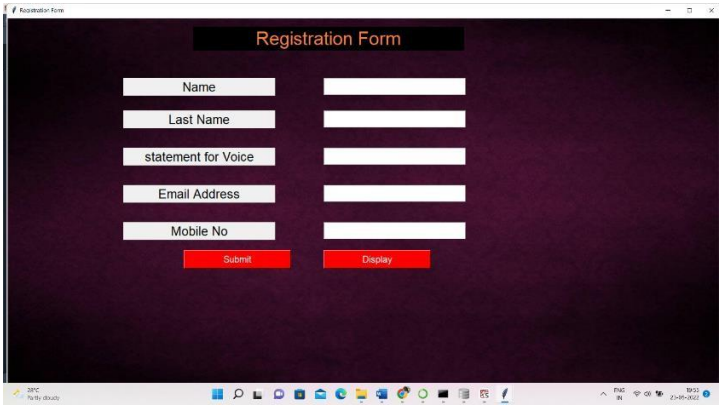
- Highly Expensive
- Distribution of Power
- Unemployment

## 8. SYSTEM PROTOTYPE

1. **Home page:** Register new user details.
2. 




3. **Registration Form:** Enter the users Detatils. And Submit.



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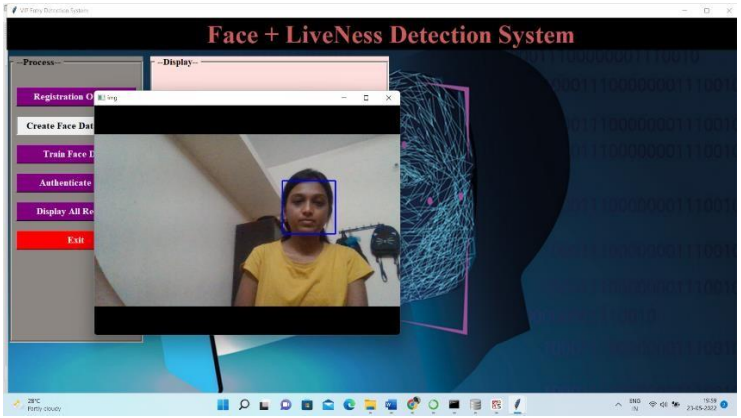
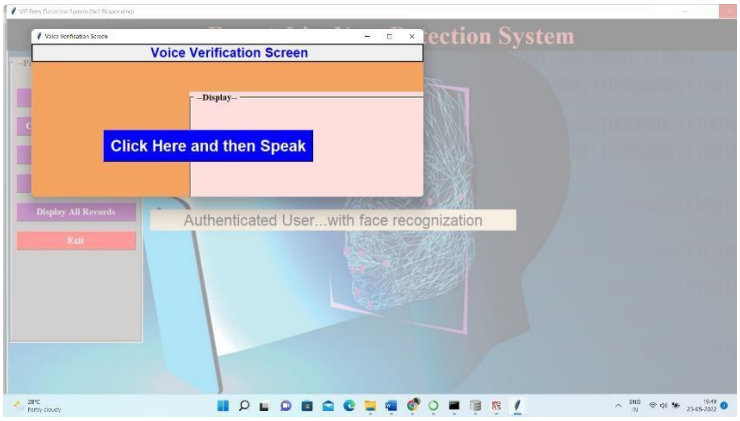
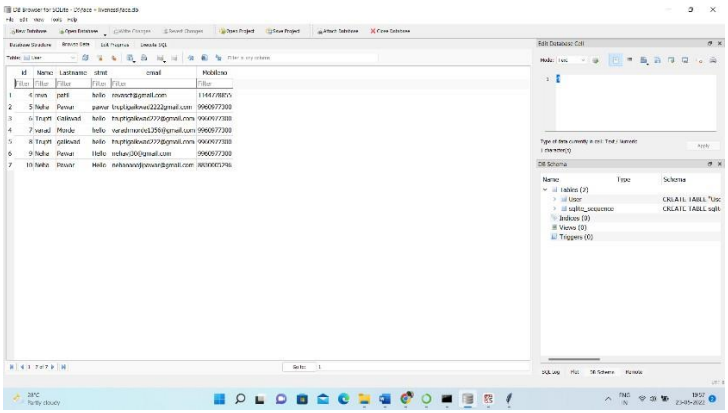
**4. Creating new user face data.**




**5. Check Livenes And Voice Verification**




**6. Display All Data**



## 9. CONCLUSION

Online banking is just like normal banking, with one big exception. You don't have to go to the bank for transactions. Instead, you can access your account any time and from any part of the world, and do so when we have the time, and not when the bank is open.detecting face by using Haar-cascade algorithm. The banking sector extensively uses AI and ML to automate processes and make them easier. A few major use-cases where these emerging technologies used are: AI and ML for fraud detection: Theft, fraud, and security penetrate the banking area because of the sensitive information and cash.

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