iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 **Issue:** V **Month of publication:** May 2022

DOI: https://doi.org/10.22214/ijraset.2022.42452

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue V May 2022- Available at www.ijraset.com

Face and Voice Authentication System

Wagh Kishor Sadashiv[1], Anushka Bagal[2], Abhijit Khatri[3], Maitrayee Dhumal[4], Sofiya Shaikh[5]
[1, 2, 3, 4, 5]*Computer Engineering Department, AISSMS IOIT, Pune, Maharashtra, India*

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. Here an individual have to provide the face and voice authentication, which uses different algorithms, and is read by the AI server for clarification and verification. From this project, we hope to build an alternative and highly verified security for banks.***
Keywords: Artificial intelligence, administrative authentication, secured transactions, financial, business, organization.

I. 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. Further, privacy and security are becoming the most concerned issues with online shopping experiences, considering rising threats from virtual cyber space, transferring of large amount of data at once, location based information, and limited account security. As a result, new improvement at online banking architectures, models, techniques and services are in urgent need. online banking drivers around the world, from giant businesses such as Reliance, Amazon, to make huge amount of business deals use only online banking transactions.speech recognition, which is used in speech-to-text applications.

A. Problem Definition

Mobil 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.

II. LITERATURE SURVEY

1) Paper Name: Leveraging large face recognition data for emotion classification

Author: Qiuyan Li Institute of Information Technology of GUET Guilin, China 310726446@qq.coBoris Knyazev, Roman Shvetsov, Natalia Efremova and Artem Kuharenko NTechLab, Russia

Abstract: In this paper we describe a solution to our entry for the emotion recognition challenge EmotiW 2017. We propose an ensemble of several models, which capture spatial and audio features from videos. Spatial features are captured by convolutional neural networks, pretrained on large face recognition datasets. We show that usage of strong industry-level face recognition networks increases the accuracy of emotion recognition. Using our ensemble we improve on the previous year's best result on the test set by about 1achieving a 60.03visual temporal information, showing a top-2 result in this challenge

2) Paper Name: Wasserstein CNN: Learning Invariant Features for NIR-VIS Face Recognition

Author: Ran He, Senior Member, IEEE, Xiang Wu, Zhenan Sun

Abstract: This paper proposes the novel Wasserstein convolutional neural network (WCNN) approach for learning invariant features between near-infrared (NIR) and visual (VIS) face images (i.e., NIR-VIS face recognition). The low-level layers of the WCNN are

trained with widely available face images in the VIS spectrum, and the high-level layer is divided into three parts: the NIR layer, the VIS layer and the NIR-VIS shared layer. The first two layers aim at learning modality-specific features, and the NIR-VIS shared layer is designed to learn a modality-invariant feature subspace. The Wasserstein distance is introduced into the NIR-VIS shared layer to measure the dissimilarity between heterogeneous feature distributions. W-CNN learning is performed to minimize the Wasserstein distance between the NIR distribution and the VIS distribution for invariant deep feature representations of heterogeneous face images.

3) Paper Name: Face and Gender Recognition System Based on Convolutional Neural networks

Author: Yuxiang Zhou and Hongjun Ni

Abstract: In the existing research, face features and gender attributes are separated, 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). The system consists of two components: one is face recognition module and two is gender recognition module. Both face recognition module and gender recognition module use pre-trained CNN to extract face and gender features in the image. Specifically, in the face recognition module, we use the public datasets Labeled Faces in the Wild (LFW), YouTube Face (YTF) and VGGFace2 to train CNN, which improves the precision. In the gender recognition module, we use the public dataset Audience to train CNN and improve the best recognition accuracy from 91.80

4) Paper Name: Detecting Impersonation in Social Network Sites (SNS) Using Arti ficial Immune Systems (AIS)

Author: Emmanuel Borkor Nuakoh

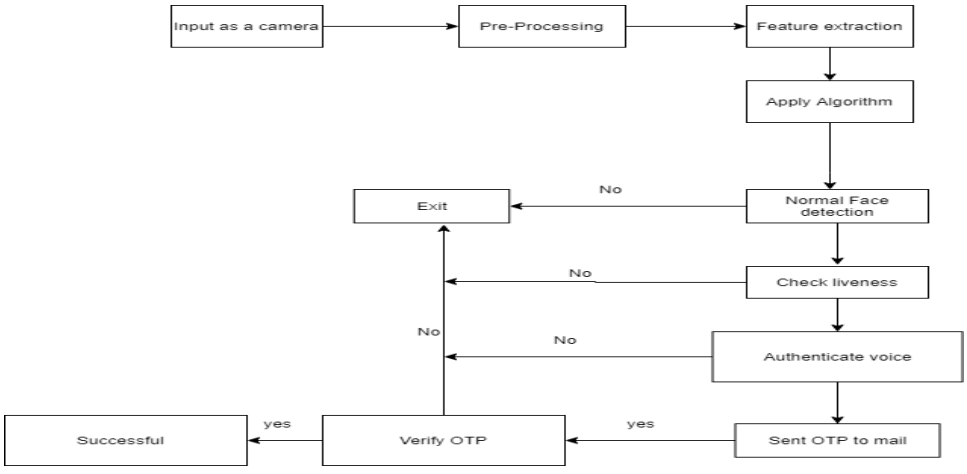
Abstract: The Internet is rapidly growing; more and more nodes are getting connected daily. Statistics from various research works shows that the number of U.S. online banking adult users rose by 34.4figures raise serious concerns about the potential dangers that may exist in online platforms. This paper studied the increasing online identity fraud (impersonation attacks) that are on the rise in online platforms daily. Earlier work done by Wu et. al. (2014) showed some success of detecting identity fraud in Social Network Systems (SNS). A general approach is provided for classifying user activities as “malicious/fraudster” or “legitimate/user” using Artificial Immune Systems (AIS). The work will contribute to informing the users of how their accounts are being interacted with and protecting them from identity fraud.

5) Paper Name: The Research and Design of Online Examination System

Author: Zhang Yong-sheng1

Abstract: With the development of society, different kinds of examination appear constantly. The way of traditional examination has been unable to meet the needs of the developing education informationization. The role was divided into function modules by analyzing users’ requirement. An online examination system based on Web was designed, which adopted B/S mode, used the IDEA as the coding tool, combined with the MySQL database and related technology. It realized the user login, security authentication, question bank management, test paper management, online examination, announcement, sourcing, check results etc.

III. PROPOSED SYSTEM



Module

A. 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, View All Keyword Search Results, View All Product Review Rank Results.

B. View and Authorize Users

1) 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 authorizes the users.
2) View Charts Results
3) View All Products Search Ratio, View All Keyword Search Results, View All Product Review Rank Results.

C. 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.

D. End 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 best or 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 Manage Account, Search Products by keyword and Purchase, View Your Search Transactions, View.

IV. METHODOLOGY/ALGORITHM

1) Identify the Users,
   U = {u1,u2,u3,...}
   Where 'U' is main set of Users like u1, u2, u3, ..
2) D be the set of Data. D = {D1,D2,D3,...
3) Entered Queries
   Q = {Q1,Q2,Q3,...}
   Where 'Q' is main set of queries q1, q2, q3, ...
4) SYS = {DX, DF, AP, BG, HD, HV}
   – DX = It Data Extractor which extract the data from the dataset.
   – DF = Search query using DFS in database.
   – AP = Filter the results of DFS using Apriori Algorithm.
   – BG = It generate the Bipartite graph by considering query and url as a node.
   – HD = Heat Diffusion find out H-D matrix for query and H-D with Random Jump matrix.
   – HV = It is Heat Vector which suggest the final recommendation for the given query in particular order
5) Identify the processes as P.
   P = {P1,P2,P3,P4}
   – P1 = {e1, e2} where,
   { e1 = i | i, database designing from the dataset }
   { e2 = j | j, show all clicks through data from the database }
   – P2 = {e1, e2, e3, e4}where,
   { e1 = i | i, Take the Query from the user t }
   { e2 = i | i, Search query using DFS }
   { e3 = j | j, Filter the results of DFS using Apriori }
   { e4 = j | j, Generate the directed bipartite Graph }
   Graph G = {E,V} where,

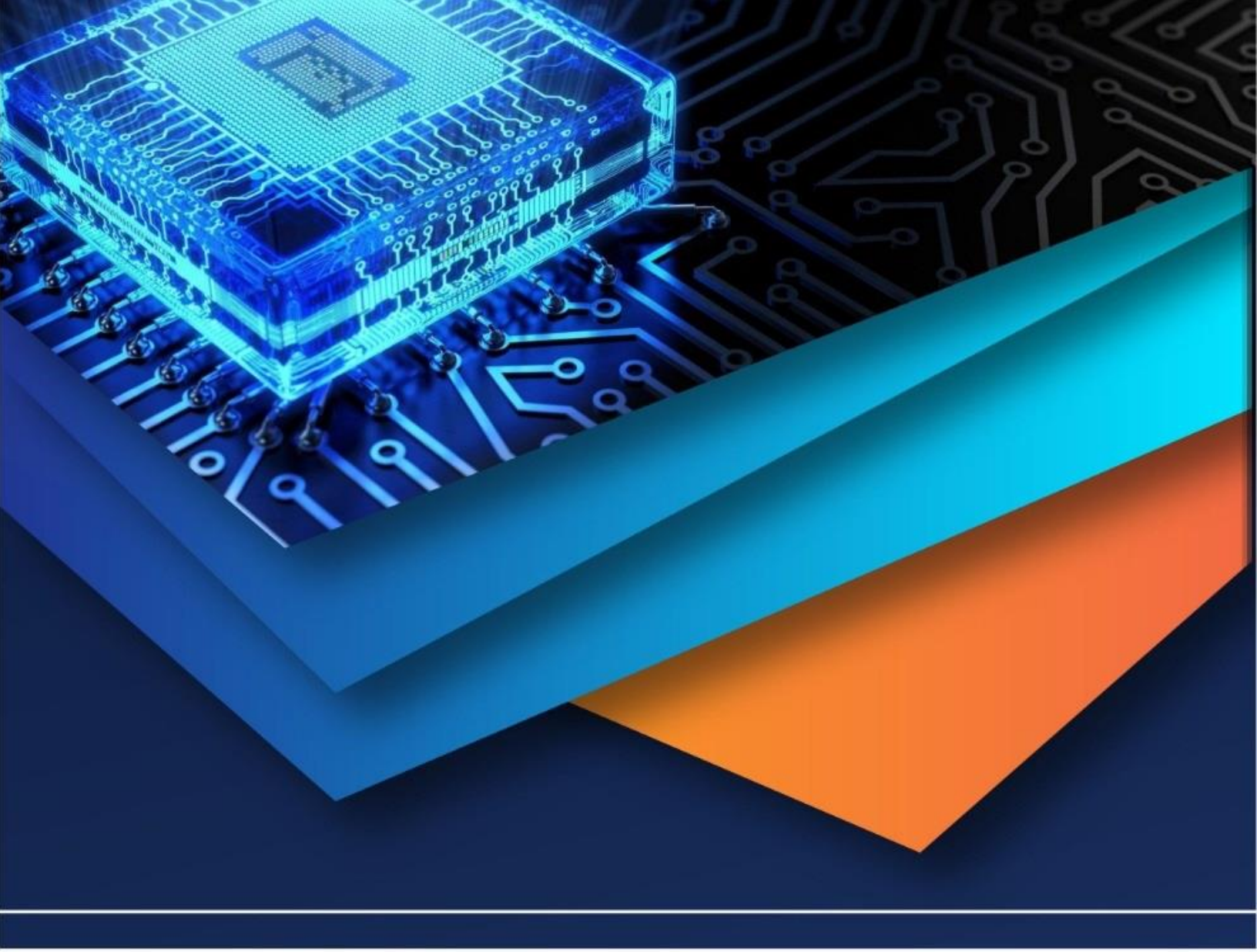
∗ V = {v1, v2, v3,...} be set of vertex
∗ E = {(v1, v2),(v2, v3)} be set of edges
– P3 = {e1, e2} where,
{ e1 = i | i, Find out the similarity information propagation on Web

V. 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.

REFERENCES

[1] S. Rethinagiri, et al. "An energy efficient hybrid FPGA-GPU based embed ded platform to accelerate face recognition application." Symposium on Low Power and High-Speed Chips, 2015.
[2] F. W. Wheeler, X. Liu, and P. H. Tu, "Multi-frame super-resolution for face recognition," in 2007 First IEEE International Conference on Biometrics: Theory, Applications, and Systems, Sept 2007, pp. 1–6.
[3] Pejman Rasti, Tonis Uiboupin, Sergio Escalera, and Gholamreza Anbar- ˜ jafari, Convolutional Neural Network Super Resolution for Face Recognition in Surveillance Monitoring, pp. 175–184, Springer International Publishing, Cham, 2016.
[4] Philippe Dreuw, Pascal Steingrube, Harald Hanselmann, and Hermann Ney, "Surf-face: Face recognition under viewpoint consistency constraints," in Proc. BMVC, 2009, pp. 7.1–7.11, doi:10.5244/C.23.7.
[5] F. Juefei-Xu, D. K. Pal, and M. Savvides, "NIR-VIS heterogeneous face recognition via cross-spectral joint dictionary learning and reconstruction," in IEEE Conference on Computer Vision and Pattern Recognition Workshop, 2015.
[6] J. Lezama, Q. Qiu, and G. Sapiro, "Not afraid of the dark: Nirvis face recognition via cross-spectral hallucination and low-rank embedding," in IEEE Conference on Computer Vision and Pattern Recognition, 2017.
[7] R . Huang, S. Zhang, T. Li, and R. He, "Beyond face rotation: Global and local perception gan for photorealistic and identity preserving frontal view synthesis," in IEEE International Conference on Computer Vision, 2017.
[8] M. Shao and Y. Fu, "Cross-modality feature learning through generic hierarchical hyperlingual-words," IEEE Transactions on Neural Networks and Learning Systems, vol. 28, no. 2, pp. 451–463, 2016



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY