IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 8, June 2022
Impact Factor: 6.252

Face and Liveliness Detection Based Smart Bank Locker

Prof. Poonam Hadke[1], Mayur Khandagale[2], Asmita Pawar[3], Vaishnavi Rakh[4]
Faculty, Department of Computer Engineering, NBN Sinhgad School of Engineering, Pune[1]
Student's, Department of Computer Engineering, NBN Sinhgad School of Engineering, Pune[2,3,4]

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 requirement for this project is an anaconda.*

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

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 cameras is available almost everywhere, including on cell phones. Currently, advanced methods of facial recognition as well authentication are 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 ways to reassure their customers. An effective verification system should protect customer data, to prevent money laundering and terrorist financing, to reduce fraud, documents (13,501 articles) taken from programs.

II. MOTIVATION

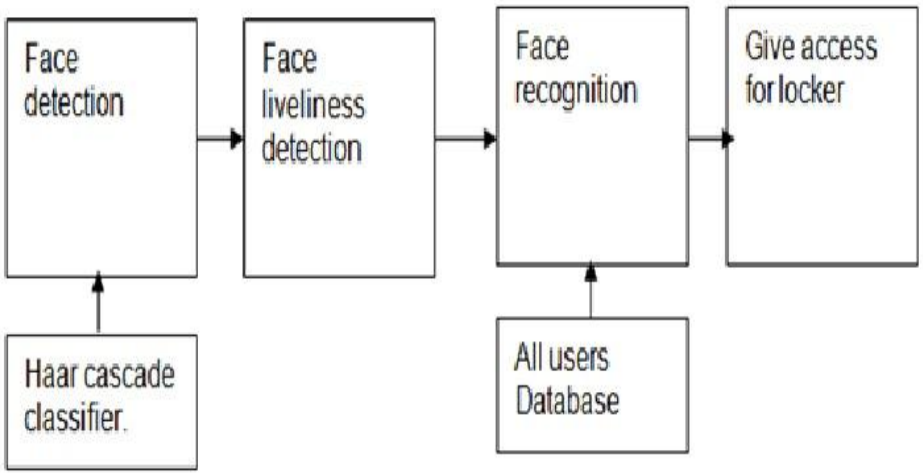
1. The main motivation for the program is point to user.
2. Provides limited user access time using facial recognition.
3. Used to detect an unauthorized user.
4. Life discovery has been a major research topic in the recognition of fingerprints and iris recognition communities in recent years.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 8, June 2022
Impact Factor: 6.252

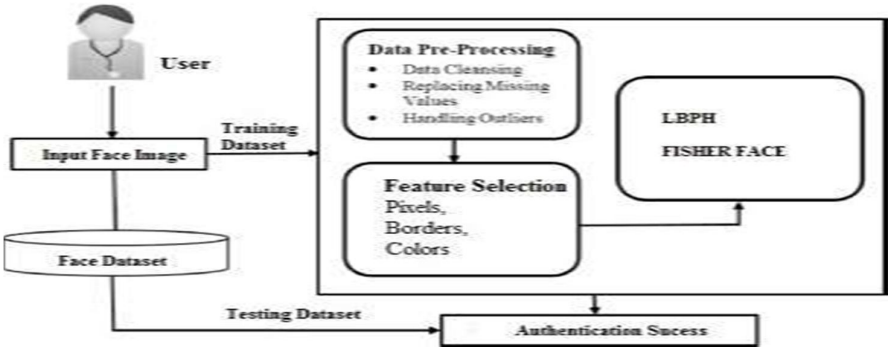
III. LITAERATURE SURVEY

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



IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 8, June 2022
Impact Factor: 6.252

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 everyone in data testing and training.
- We need to get a cut and grey scale picture.
- Now training data sets are issued with image features and are saved by counting.

A. Mathematical Model

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

There, 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 liveliness of the face i.e., eyes are blinking or not.
- Recognize face and access the respected locker of the user.

VIII. RESULT

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 8, June 2022
Impact Factor: 6.252

The general public is in dire need of security measures in the face of fraudulent attacks. Biometrics is a fast-growing part of such a security sector. Other common face recognition techniques, fingerprint recognition, handwriting verification, hand geometry, retinal scanner and iris. Among these methods, which have developed rapidly in recent years facial recognition technology in general, face recognition algorithms are unable to distinguish live faces from inanimate faces which is a major safety problem.

VIII. CONCLUSION

In this paper, we have proposed a machine learning based face detection recognition and liveliness detection for bank locker. In this project user will use bank locker by using face detection and liveliness technique. This face detected locker is much better than traditional locker because it does not require any traditional key to unlock the locker. It is highly reliable system to ensure the security of our valuables.

REFERENCES

[1] Shilpa Garg Scholar, Sumit Mittal Professor, "DeBNet: Multilayer Deep Network for Liveness Detection in Face Recognition System", 2020 7th International Conference on Signal Processing and Integrated Networks (SPIN).

[2] Sudeep Thepade, Prasad Jagdale, "Novel Face Live ness Detection Using Fusion of Features and Machine Learning Classifiers", 2020 IEEE International Conference on Informatics, IoT, and Enabling Technologies (ICIoT).

[3] Shireesha Chintalapati; M. V. Raghunadh, "Automated Attendance Management System Based on Face Recognition Algorithms", 2013 IEEE International Conference on Computational Intelligence and Computing Research.

[4] Phichaya Jaturawat; Manop Phankokkruad, "An Evaluation of Face Recognition Algorithms and Accuracy based on Video in Unconstrained Factors", 2016 6th IEEE International Conference on Control System, Computing and Engineering (ICCSCE)

[5] Abhishek Jha: ABES Engineering College, Ghaziabad, "Class Room Attendance System Using Facial Recognition System", The International Journal of Mathematics, Science, Technology and Management (ISSN: 2319-8125) Vol. 2 Issue 3

[6] S. SAYEED, J. HOSSEN, S.M.A. KALAIARASI, V. JAYAKUMAR, I. YUSOF, A. SAMRAJ, "Real-Time Face Recognition for Attendance Monitoring System" Journal of Theoretical and Applied Information Technology 15th January 2017. Vol.95. No.1 www.ierjournal.org International Engineering Research Journal (IERJ), Volume 3 Issue 4 Page 6617-6620, 2021 ISSN 2395-1621 ©□ 2020, IERJ All Rights Reserved Page 4

[7] Ashish Choudhary, Abhishek Tripathi, Abhishek Bajaj, Mudit Rathi, and B.M Nandini, "Attendance System Using Face Recognition", International Journal of Modern Trends in Engineering and Research (IJMTER) Volume 03, Issue 04, [April– 2016] ISSN (Online):2349–9745; ISSN (Print):2393-8161A. Karnik, "Performance of TCP congestion control with rate feedback: TCP/ABR and rate adaptive TCP/IP," M. Eng. thesis, Indian Institute of Science, Bangalore, India, Jan. 1999.

[8] J. Padhye, V. Firoiu, and D. Towsley, "A stochastic model of TCP Reno congestion avoidance and control," Univ. of Massachusetts, Amherst, MA, CMPSCI Tech. Rep. 99-02, 1999.

[9] Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specification, IEEE Std. 802.11, 1997.