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Vehicle and Driving License Authentication Using Face Recognition

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ABSTRACT

The purpose of this study is to simplify the driving license authentication system by making it a digitalized version. The difficulty in driving license authentication system is a driver has to be authorized manually whether he/she is authenticated to drive based on the license. Driver has to carry the license always to be verified. To handle this difficulty a system to be created to verify the license. The idea is to use mechanisms like face recognition, matching algorithm for this purpose. A centralized storage which stores and facial image of authenticated drivers along with expiration period. : A Driving license identification system as a part of smart city development. Driving license system is a huge task for the government to monitor. Whenever the person gets the license that time, the face of the person is stored in the database. Haar-Cascade Classifier algorithm is used for face detection and Local Binary Pattern algorithm for recognition technology. The hardware components are cost effective, small in size and has sufficient computational power for application-oriented components.

I. INTRODUCTION

The people who have vehicles need the license to be authorized for driving it. Sometimes drivers forget to take their license with the and get confronted by a traffic police for their defiance. The validity for having a license is 20 years but we may forget to renew it, people get to be fined and seized for driving the vehicle without proper license. At times, people lose their original copy of the license they have and don't know how to go to places with their vehicles with being scared of getting caught by police for their defiance. The old method of verifying the documents causes heavy traffic, takes time for verifying and even difficult to validate if the details are smudged because of the frivolous attitude of vehicle drivers when confronted to verify details of the validity in their license. The purpose of our project is to replace the usage of hard copy of license documents when driving the vehicles to bring into the digital smart city using e-license. This Project induces in bringing face recognition system for verifying the license of individuals. The License Verification System can benefit smart city Information services. This paper mainly focuses on the various proposed methodologies which are used to tackle the important issue of smart driving license checking. In this paper, we have presented the exhaustive analysis of the vast literature relevant and pertinent to authentication and the mechanisms associated with it. Although, there are lot many research contributions in this field, but here we have critically analysed and summarized ten significant research works and projects addressing it. These related works are recent, consistent and pertinent. The studied literature is also systematically arranged in tabular form for comparative analysis.

II.LITERATURE SERVEY

1.License Verification System with Face Recognition

Author – I Abraham Ziegen, Joel Manova M and Dr. A Akilandeswari

Year – 2021

There are multiple ways that we can use to authenticate the drivers instead of manual verification process. Few mechanisms that we can use to authenticate drivers, face recognition and finger print authentication. Face recognition to be implemented in some important places like traffic signal and on bypass road tollbooth. The system will automatically recognize the user and that will check the database whether the user is authenticated or not. Based on that a report of history will be generated regarding travel history. All these logs to be stored in a centralized storage.



2. Vehicle Security Systems using Face Recognition

Author – Ahmed A. Elngar and Mohammed Kayed

Year – 2020

The performs intelligent functions, which lead to avoid vehicle theft. Many authors have been working on vehicle security systems to provide the best mechanisms not only concerning with the theft of vehicle contents but also the loss of vehicles, and the personal security requirements of the vehicle's owner. According to their works; they have developed a vehicle security systems based on "Biometric Authentication" type such as eye, finger, face recognition, etc.

3. Driver Authentication System

Author - AnuraagKhanna ,VaishnaviAswale

Yaer – 2020

Improper driving of vehicles by non-licensed persons has led to majority of accidents. It is necessary to implement a system where the driver is compelled to carry a driving license while driving. The details of the driver will be stored on a website so that it will be easy to identify who was driving the particular vehicle at the given time. Biometric verification is one of the method to check non-licensees.

4.Finger print based license authentication scheme for Indian scenario: A Review

Author - D. ArchanaThilagavathy, Prasanna R., Priyadarshinee

Year – 2015

Fingerprint authentication or recognition refers to the automated method of verifying a match between two human fingerprints. Fingerprints are one of many forms of biometrics used to identify individuals and verify their identity. The analysis of fingerprints for matching purposes generally requires the comparison of several features of the print pattern. In this project, we use the Finger print authentication scheme which is a non-imitable biometric authentication scheme.

III.EXISTING SYSTEM

The advancement in the field of transportation leads to the increase in number of users who use road facility. So, the threat of the road accident is fast increasing and it is confirmed that the road accidents is the unlicensed drivers driving on the road. This may also include suspended, revoked, expired, cancelled and denied licenses. The verification of drivers on road individually is a hard-hitting process. Things are getting difficult which are not digitalized. The purpose of this study is to simplify the driving license authentication system by making it a digitalized version. The difficulty in driving license authentication system is a driver has to be authorized manually whether he/she is authenticated to drive based on the license.

DISADVANTAGES

- Driver has to carry the license always to be verified. To handle this difficulty a system to be created to verify the license. The idea is to use mechanisms like face recognition, matching algorithm for this purpose.
- A centralized storage which stores the and facial image of authenticated drivers along with expiration period.
- These data to be stored securely. Hence, these data to be retrieved via web or mobile application.

PROPOSED SYSTEM

Continuous driver authentication is useful in the prevention of car thefts, fraudulent switching of designated drivers, and driving beyond a designated amount of time for a single driver. In this paper, we propose a deep neural network based approach for real time and continuous authentication of vehicle drivers. Features extracted from pre-trained neural network models are classified with support vector classifiers. In order to examine realistic conditions, we collect 130 in-car driving videos from 52 different subjects. We investigate the conditions under which current face recognition technology will allow commercialization of continuous driver authentication. A typical scenario could be that an authorized driver of a transportation firm can use some credentials to make the control center believe that the vehicle is used by a certain driver at the onset of the driving session, and then let another, unauthorized person to drive, violating the related regulations. A reliable, low-cost, and transportable real-time authorization system would help to improve detection of such frauds.



ADVANTAGES

- In this paper, we develop a system for real-time authentication of vehicle drivers. Our approach uses recent advances in deep neural network based face recognition, and deals with problems specific to the application scenario.
- We introduce an in-car face database collected from public videos, where we report experimental results in realistic acquisition conditions.
- Detect the face and to crop the detected image for optimized processing.
- Recognize the face and calculate the accuracy in terms of percentage.

MODULE DESCRIPTION

Image Processing

To notice a face, we apply each and every feature on all the training images. For each feature, it finds the best threshold which will classify the faces to positive and negative. But obviously, there will be errors or miscategorization. We select the features with minimal error rate, which means they are the features that best classifies the face and no face images. The process is not as simple as this. Each image is given an equal importance in the beginning. After each categorization, weightage of misclassified images are increased. Then again same process is done. New error rates are calculated. Also new weights. The process is continued until required accuracy or error rate is achieved or necessary number of features are found..

Data Classification

The categorization process makes data easier to locate and retrieve. Data categorization is of particular importance when it comes to risk management, compliance, and data security.

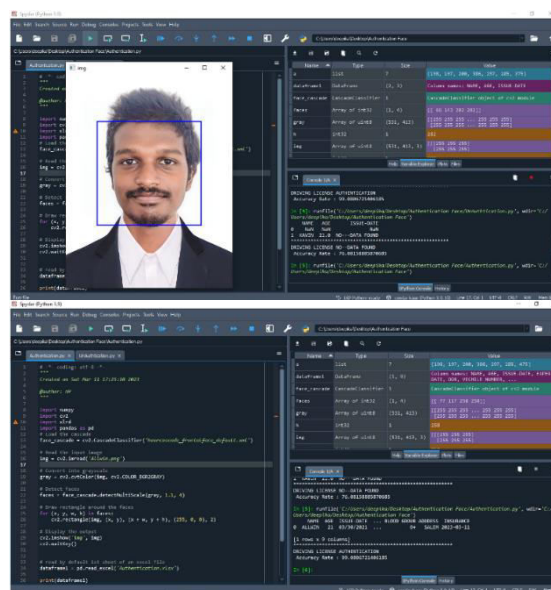
Haar-Cascade Detection

In OpenCV In order to detect the face there are predefined classifiers functions to identify the face with eyes, nose, mouth. These predefined object functions are stored under opencv/data/haarcascades/ folder which are in XML Format.

License Verification System

A Driving license identification system as a part of smart city development. Driving license system is a huge task for the government to monitor. Whenever the person gets the license that time, the face of the person is stored in the database. Haar-Cascade Classifier algorithm is used for face detection and Local Binary Pattern algorithm for recognition technology. The hardware components are cost effective, small in size and has sufficient computational power for application-oriented components.

IV.RESULTS





V.CONCLUSION

In future, this system can be extended to more applications by integrating it with other features like drowsiness detection. Detecting the drowsiness of the driver is one of the surest ways of measuring driver fatigue. Due to drowsiness, one can lose the control of vehicle and can cause accident. Instead of threshold drowsiness level it could also be designed as a continuous scale driver fatigue detection system. It monitors the level of drowsiness continuously and when this level exceeds a certain value a signal is generated which controls the hydraulic braking system of the vehicle. Continuous driver authentication is useful in the prevention of car thefts, fraudulent switching of designated drivers, and driving beyond a designated amount of time for a single driver. In this paper, we propose a deep neural network based approach for real time and continuous authentication of vehicle drivers.

REFERENCES

- [1] Biometrics, Computer Security Systems and Artificial Intelligence Applications by Khalid Saeed and Jerzy Pejas.M. Young, The Technical Writer’s Handbook. Mill Valley, CA: University Science, 1989.
- [2] Biometrics: Advanced Identity Verification: The Complete Guide” by Julian Ashbourn
- [3] Information Systems Security and Privacy” by Christophe Bidan and Olivier Camp
- [4] Biometrics: Identity Verification in a Networked World” by Samir Nanavati and Michael Thieme
- [5] Vehicle And License Authentication Using Finger Print by Prema and Mohammed Riyas
- [6] Prof. C. S. Pagar, et.al., Electronic Secure Vehicle Verification System using Advanced RTO System, International Research Journal of Engineering and Technology (IRJET), Volume 7, Issue 4, pp. 5330-5336, Apr 2020
- [7] Dr.A.Srinivasarao, S.Gopiraju, M.Raghavendra, E- Driving License Authentication System, International Journal for Research in Engineering Application & Management (IJREAM), pp. 176-178, 2018
- [8] Prof.Sindhu A S, Arpitha S, Bindushree C, Dhruvashree, Aishwariyaa V , Vehicle And Licence Authentication Using RFID and Finger Print, International Journal of Advanced Research in Computer and Communication Engineering (IJARCCE), Volume 10, Issue 7, pp. 346- 350, July 2021
- [9] Sandeep Gupta, AttaullahBuriro, Bruno Crispo, DriverAuth: Behavioral biometric-based driver authentication mechanism for on-demand ride and ridesharing infrastructure, The Korean Institute of Communications and Information Sciences (KICS) published by Elsevier, Science Direct, ICT Express, Volume 5, pp. 16-20, 2019
- [10] Abraham Ziegen, Joel Manova M and Dr. A Akilandeswari, License Verification System with Face Recognition Using IOT, International Journal of Advanced Research in Science, Communication and Technology (IJARST), Volume 4, Issue 2, pp. 656-670, April 2021



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