DL KEY- A REVIEW

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Abstract-
India, as a developing nation with the second-largest population in the world, faces significant challenges in managing its roadways due to the high density of vehicles. Two-wheelers, four-wheelers, buses, trucks, and various other vehicles crowd the roads, with nearly every household, regardless of socioeconomic status, owning at least one two-wheeler. However, this increased vehicle presence has led to a sharp rise in traffic accidents, posing a persistent danger to commuters on a daily basis. In recent years, the government has implemented stricter enforcement of traffic rules and regulations, recognizing the urgent need to address road safety concerns. Despite these efforts, many individuals continue to drive without proper licenses, further exacerbating the risk of accidents. Unfortunately, adherence to traffic rules remains a challenge in India, influenced by cultural attitudes and issues of corruption.To address these challenges and improve traffic management, there is a pressing need for a more robust system to identify and penalize offenders. One proposed solution is the development of an application or system that links a user's driving license to their vehicle registration. This system would serve as both authentication and a key for their vehicle, ensuring that traffic violations are associated with the individual's license rather than the vehicle's registration number. Under this system, offenders would receive fines or penalties directly tied to their driving license, with notifications sent to their registered login ID. Until these fines are duly paid through the login ID, the vehicle would be prevented from starting, serving as a deterrent against repeated violations. By implementing such a system, India can take significant strides towards improving road safety, reducing traffic violations, and fostering a culture of compliance with traffic regulations. However, the successful implementation of this proposal would require robust infrastructure, technological innovation, and ongoing efforts to address systemic challenges such as corruption and cultural attitudes towards rule enforcement.

Keywords-

Smart Technology,Data Privacy, Cyber security Access to Transportation, Autonomous Driving

I. Introduction-

India is a developing nation with a huge population, which means the roads are often packed with vehicles of all kinds. And yes20, it's unfortunate that there's been an increase in accidents due to people not following traffic rules and even driving without a license. But you know what? It's great that the government is taking steps to address this issue. They've implemented strict traffic rules and are looking for ways to identify offenders and ensure their accountability. One proposed solution is an application/system where a user's vehicle number is registered with their driving license, making it easier to track and penalize rule breakers. It's definitely a step in the right direction!

Traffic can be a real challenge in India with so many vehicles on the road. It's important for everyone to follow traffic rules and have a valid driving license. I agree that a strict system to manage traffic policies and identify offenders would be helpful. The proposed application/system sounds like a good step towards ensuring accountability. It would definitely make people think twice before breaking the rules.

II. Literature Survey-

Abhishek Kale, Adarsh Roy, Akshat Sharma, Rajeev Sinha, Dr.Arvind Jagtap [1] *"Vehicle Validation and Driver Authentication System"* The Vehicle Validation and Driver Authentication system aims at verifying and validating the authorization of a driver as well as the vehicle. In this system, Node is used to store information about a user and his vehicle like license, RC, vehicle documents, fingerprints etc.An API server is used which will validate the information gathered from the node and send appropriate encrypted responses to the node for further operations.

N.Ramakumar , P.Siva Nagendra Reddy , Dr.S.A.K.Jilani [2] "*Authentication Based Systematic Driving Licencse Issuing System*" This system is designed for driving license verification purpose based on ARM9 and fingerprint authentication and also configured to execute the equipment by programming as such needed for a finger impression validation.PC there we find a option enroll, using this option we need to take the fingerprints of the applied vehicle driving license user.

Komal Chorghade , Piyush Dahiwele , Saurabh Deshmukh , Prof. Prajakta Pise [3] "*RTO Automation Using QR Code*" In this system the driver will register to RTO Services and the login credentials will be provided to driver to Login. The driver will generate a QR code for his RTO driving License therefore it is not necessary to him to carry hard copy Driving license with him.RTO authorities will generate challan on its given I.D made using his driving licence. User will know how many challans on his ID and he will pay his challan. In RTO authorities app … they will know in the history how many peoples the scanned today .

Cheng Bo, Xuesi Jian, Xiang-Yang Li [4], "*TEXIVE: Detecting Drivers Using Personal Smart Phones by Leveraging Inertial Sensors*" This system uses smartphone sensors to distinguish between drivers and passengers and detect the activity of texting while driving. The system is very accurate and uses sensors that are already available in smartphones, so it is easy to implement and adopt.TEXIVE was evaluated using a dataset of 100 users. The system achieved an accuracy of 87.18% for driver-passenger distinction, and a precision of 96.67% for side detection. The system was also shown to be energy efficient, consuming an average of 3.5 mW.

Anuraag Khanna, Vaishnavi Aswale, Mayuri Sadawarti, Kanchan Dhuri [5] "*Driver Authentication System*" In this system they use their fingerprint and license card for authentication of the vehicle. They are inserting the licence card in scanner which is place on the vehicle. If the licence is valid for vehicle then after that thumb impression on fingerprint sensor for authentication if it's gets matched then the engine will start .Database entry of the vehicle …. When its on and off.

Umesh Virkar, AishwarayaDeshmukh, NimaSarade, Aashish Joshi [6] "*Android Mobile Based Security Lock for Bike Ignition*" A system that uses an Android app to provide an additional layer of security beyond the traditional key ignition lock. The user must first use a physical key and then enter a password via the Android app to unlock the bike. If an incorrect password is entered, the system triggers a buzzer as an alert. The bike locker is controlled by a microcontroller, which ensures that only authorized users can access the bike.

Bashar I. Ahmad, Patrick M. Langdon , Jiaming uski Liang , Simon J. Godsill , Mauricio Delgado and Thomas Popham [7]"*Driver and Passenger Identification from Smartphone Data*" This project presents an overview of existing driver and passenger identification methods using smartphone data and proposes a new method based on smartphone inertial measurements and door signals. The proposed method analyzes user behavior during entry to a vehicle and uses a suitable classifier to identify the user. The project aims to demonstrate the effectiveness of this identification technique for personalized driving experiences, insurance telematics, minimizing distractions, and enhancing vehicle security.

N.Duraichi , K.Arun Kumar , N.Lokesh Sathya , S.Lokesh [8] "*Automobile Authentication and Tracking System*" This project utilizes RFID tags, infrared sensors, cameras, and microcontrollers to verify the identity of drivers before allowing the vehicle to start. Drivers must place their RFID tag near a reader, and the system verifies their details with stored data. Additionally, an infrared sensor detects if the driver is seated, and a camera captures their image for comparison. If all details match, the vehicle starts; otherwise, an alarm is triggered. This system aims to prevent vehicle theft, unauthorized driving, and reduce accidents.

Ekberjan Derman and Albert Ali Salah [9] "*Continuous Real-Time Vehicle Driver Authentication Using Convolutional Neural Network Based Face Recognition*" The system collects in-car driving videos from various subjects to train the DNN. The project uses a deep learning model to continuously check the driver's face in real-time, ensuring the person driving is the authorized driver. It helps prevent car theft and unauthorized driving.

DHANASHRI SUNIL DHALE, DR. V B GADICHA [10] "*A Review Of Smart Driving Document Authentication Techniques*" The project aims to digitize the driving license authentication system by utilizing technologies like face recognition, fingerprint matching, QR code scanning, and optical character recognition. It involves creating a centralized storage for authenticated drivers' data, securely storing information like fingerprints and facial images along with expiration dates. This data can be retrieved via web or mobile applications for verification. The system allows drivers to carry a digital QR code instead of physical licenses, simplifying authentication processes. Traffic police can scan the QR code to verify license details, reducing the risk of fake licenses and enhancing road safety.

Gokul P S, Mahi Balakrishna A , Nivasini A [11] "*Overview Of Driving License Authentication System*" The project utilizes face recognition and fingerprint matching algorithms for driver authentication. 6. Machine learning and deep learning algorithms are used for facial recognition, while scan algorithms are used for fingerprint matching. By ensuring that only authorized individuals with valid licenses can drive vehicles, the project aims to enhance road safety and prevent unauthorized driving.

C.Viji, R.Gokul, N.Hari Krishnan and BP.Kathiresan [12] "*Smart Vehicle Authentication and Due Date Monitoring System using IoT*" Uses a fingerprint scanner integrated into the vehicle's ignition system. Scans the driver's fingerprint and the one stored in the smart driving license. If both match, vehicle starts; if not, it remains inoperative. Utilizes Wi-Fi module to monitor insurance due date. Sends a reminder two days before due date. Activates buzzer alarm if payment not made, blocking engine if payment still.

Derick A. Johnson and Mohan M. Trivedi [13] "*Driving Style Recognition Using a Smartphone as a Sensor Platform*" this project proposes a system called MIROAD (Mobile-Sensor-Platform for Intelligent Recognition Of Aggressive Driving) to enhance driver safety by detecting and recording potentially aggressive driving behaviors using smartphone sensors. By fusing data from multiple sensors such as accelerometer, gyroscope, magnetometer, GPS, and video, the system identifies aggressive driving events in real-time using the Dynamic Time Warping (DTW) algorithm. It provides audible feedback to drivers if their driving style becomes aggressive and records relevant information leading up to aggressive events.

Nidhi Kalra, Gunjan Chugh, Divya Bansal [14] "*Analyzing Driving and Road Events via Smartphone*" This project aims to enhance road safety in India by monitoring driver behavior and road conditions using smartphone accelerometer sensors. It collects data on driving events like turns and sudden braking, as well as road anomalies like potholes and bumps. The collected data is analyzed to identify patterns and ensure driver safety and road maintenance. This approach is cost-effective, portable, and requires minimal maintenance compared to traditional specialized hardware.
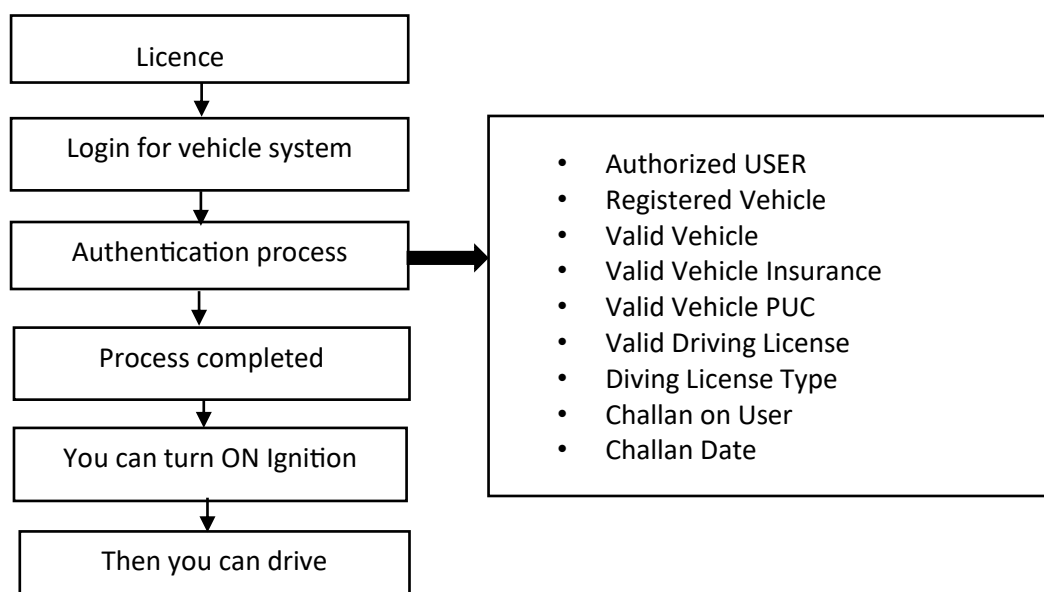
Flow chart of Work

Fig 1. Block Diagram of Proposed System

1. Nowadays people operating a vehicle without a valid driver's license or with an expired license.

2. They continuing to operate a vehicle after the license has been suspended or revoked due to previous traffic violations or other infractions.

3. Presenting a counterfeit or fraudulently obtained license to law enforcement or when renting a vehicle.

4. Driving a vehicle that has not been registered with the appropriate authorities, lacking license plates or proper identification.

5. Operating a vehicle without valid insurance coverage, which is mandatory in many jurisdictions.

6. To overcome this kind problems we are making a system which will help the RTO and government to reduce this things.

7. Introduce a mandatory registration process where individuals are required to register their vehicles along with their valid driving licenses.

8. Implement a rigorous verification process to ensure that the driving license and vehicle registration documents provided by users are valid and up-to-date.

9. This can involve cross-referencing the information with government databases and conducting background checks to prevent the use of fake or fraudulent documents.

III.RESULTS AND DISCUSSION

Preventing unauthorized driving, and streamlining authentication processes. By leveraging technologies such as biometrics, QR codes, IoT, and smartphone sensors, these systems aim to verify the identity of drivers, authenticate vehicles, and monitor driving behaviors effectively. From digitizing driving licenses to implementing real-time authentication using facial recognition or fingerprint matching, these initiatives prioritize accuracy, efficiency, and convenience. Furthermore, the integration of IoT capabilities allows for the monitoring of vehicle insurance due dates, ensuring compliance with regulatory requirements.

IV.CONCLUSION

Based on the work in progress of the DL-key (driving license key) system, it seems like a promising step towards ensuring accountability on the roads. By implementing this system, it will be easier to identify offenders and enforce traffic rules. It's a great initiative that will hopefully lead to safer roads and a more responsible driving culture. Can't wait to see the positive impact it will have.

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