Vehicle Theft Investigation Assistance System

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Abstract: A Vehicle Theft Investigation Assistance System is an embedded system installed in vehicle to enable the vehicle tracking based on the location and smart user auto-authentication. This project propose to design a Vehicle theft investigation assistance system, which work using GPS,GSM, Camera module and cloud technology which aids to track and investigate theft vechicle.It is an embedded systems used for tracking, positioning and owner authentication by face recognition techniques. The crucial data will stored/fetched to cloud, for further cloud data can used for Vehicle theft investigation in real time.

Keywords: Vehicle Theft.

I. INTRODUCTION

Vehicle theft investigation assistance system is a technology-driven system that aims to assist law enforcement agencies in investigating and preventing vehicle theft. The system works by using a combination of advanced technologies, including artificial intelligence, machine learning, and data analytics, to help authorities quickly identify stolen vehicles and apprehend the thieves.

The system is designed to provide law enforcement agencies with real-time information on stolen vehicles, including their location, movement, and history. It uses a network of sensors, cameras, and other devices to collect data and transmit it to a central command center, where it is processed and analyzed.

One of the key features of the system is its ability to automatically detect suspicious activity and alert authorities. For example, if a vehicle is being moved at an unusual time or in an unusual location, the system can send an alert to law enforcement agencies, who can then investigate further.

The system also includes a database of stolen vehicles, which can be accessed by law enforcement agencies to search for stolen vehicles and obtain information on their history and ownership. The database is constantly updated with information from various sources, including law enforcement agencies, insurance companies, and vehicle owners.

Overall, the vehicle theft investigation assistance system is a powerful tool for law enforcement agencies in their efforts to prevent and investigate vehicle theft. By providing real-time information and alerts, as well as access to a comprehensive database of stolen vehicles, the system can help authorities quickly recover stolen vehicles and bring the perpetrators to justice.

II. LITERATURE SURVEY

A. S. Bhangale and S. S. Deshpande [1] The real-time vehicle tracking and anti-theft system is designed to provide an effective solution to track the location of a vehicle in real-time and prevent vehicle theft.

V. S. S. V. S. A. M. K. S. K. Kumar and K. V. N. R. K. Prasad [2] This review paper discusses various techniques and technologies used in vehicle theft prevention and tracking systems. It provides an overview of GPS and GSM technology, facial recognition technology, cloud computing, and other relevant technologies used in designing such systems.

S.S. Akhilesh et al,[4] The Vehicle Theft Investigation Assistance System is a proposed system that aims to assist law enforcement agencies in investigating and recovering stolen vehicles. The system, asdescribed in the paper by S. S. Akhilesh et al, is designed to automate the process of tracking and analyzing data related to stolen vehicles, and provideactionable insights to investigators.

H. Zhu et al [5] -based vehicle theft detection andprevention system proposed by H. Zhu et al. is a novel approach to addressing the issue of vehicle theft. The system combines the use of IoT and blockchain technology to monitor and secure vehicle data.

R. N. Nemade and S. S. Wadhai [6] The system includes a GPS module, an accelerometer, a Wi-Fi module, and a neural network algorithm. The GPS module is used to track the vehicle's location, while the accelerometer detects any sudden changes in the vehicle's movement.

S. U. Bhosale and V. R. Deshpande [7] The smart vehicle security system is to provide an advanced level of security to vehicles using IoT and cloud computing technology.The system includes a GPS module, an accelerometer, a Wi-Fi module, and a cloud server.

K. R. Meena and R. Kumari [8] The vehicle theft control and accident notification system proposed by K. R. Meena and R. Kumari is designed to provide an effective way to prevent vehicle theft and notify the owner in case of an accident.

P. T. Odeye system proposed mi and O. A. Odeyinka[9] The vehicle theft detection and tracking system proposed by P. T. Odeyemi and O. A. Odeyinka is designed to provide an effective solution to prevent vehicle theft and track the location of a stolen vehicle.

III. METHODOLOGY

The methodology of the vehicle theft investigation assistance system involves several key components, including data collection, analysis, and dissemination. Here are some of the steps involved in the methodology:

- Data Collection: The system relies on various sources of data to detect and track stolen vehicles. This includes data from GPS trackers, license plate readers, surveillance cameras, and other sensors. The data is collected in real-time and transmitted to a central command center for analysis.

- Data Analysis: The data collected by the system is analyzed using machine learning algorithms and data analytics tools. The algorithms can detect patterns and anomalies in the data that may indicate vehicle theft. For example, the system may detect a vehicle that is being driven at an unusual time or in an unusual location.

- Alert Generation: When the system detects suspicious activity, it generates an alert that is sent to law enforcement agencies. The alert may include information about the location and description of the stolen vehicle, as well as other relevant details.

- Database Management: The system also maintains a database of stolen vehicles, which is constantly updated with information from various sources. This database can be accessed by law enforcement agencies to search for stolen vehicles and obtain information on their history and ownership.

- Collaboration: The system encourages collaboration between law enforcement agencies, insurance companies, and vehicle owners. This can help to improve the accuracy of the data in the system and increase the chances of recovering stolen vehicles.

- Feedback and Improvement: The system is continuously evaluated and improved based on feedback from law enforcement agencies and other stakeholders. This helps to ensure that the system is effective in preventing and investigating vehicle theft.

Overall, the methodology of the vehicle theft investigation assistance system involves the collection, analysis, and dissemination of data to help authorities quickly identify stolen vehicles and apprehend the perpetrators.

IV. CONCLUSION

The proposed the Vehicle Theft Investigation Assistance System is a valuable tool for tracking and investigating stolen vehicles. By utilizing GPS, GSM, camera module, and cloud technology, the system can provide real-time tracking and location data to aid in recovery efforts. Additionally, the system can include smart user authentication, biometric sensors, and remote engine disable features to improve security and prevent theft. Future directions for the system include integration with law enforcement, improved data analytics using machine learning algorithms, and expanded use cases such as monitoring company vehicles or high-value shipments. The implementation of the system in two-wheelers can also provide an effective solution for reducing incidents of theft and improving the recovery rate of stolen two-wheelers. Overall, the Vehicle Theft Investigation Assistance System is a promising technology that can significantly improve security and safety in the transportation industry.

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