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Implementation of Vehicle Theft Detection Using CNN Algorithm

S.K.Jayakeerthana, D.Kalpana, H.Yuvapriya, K.Periyarselvam

UG Student, Dept. of ECE., GRT Institute Of Engineering and Technology, Tiruttani, India

Associate Professor, Dept. of ECE., GRT Institute Of Engineering and Technology, Tiruttani, India

ABSTRACT: The vehicle theft diagnosis system. In this project, a compact, efficient system is studied, designed and explored. Radio-frequency identification, Global Positioning System ,camera, buzzer and a Liquid Crystal Display (LCD) display are used in this system. The device functions in two modes they are user mode and Theft mode. The gadget has ability to check the information, if not having any documents; the camera will capture the person image. The device will send suspect image, latitude and longitudinal details to the authorized person, and to the nearest police station. It is easy to locate the vehicle and get accurate person details. This project explores the possibility of efficient vehicle theft detection system. crime related to vehicle theft has been a tremendous rise in every day. This generates a crucial need for an effective .

KEYWORDS: Imageprocessing, Android application, RFID Tag,

I. INTRODUCTION

Security and Surveillance of any particular area is the prime concern of an individual or a group of people to detect intrusion or any other unwanted phenomena. The use of camera security is getting popularity because of the availability and increasing advancement of image processing from collection of photos. To detect a crime or intrusion, real time image processing can be an optimal solution Detection and tracking moving objects have various applications in the domain of machine vision such as: monitoring systems, industrial control and gesture based computer interaction Object tracking in video surveillance systems are widely used by security agencies to have real time monitoring and also to detect potential security threats by instant. Moving object identification is the task of determining an object's physical movement of a specific area or region. From last few years, detection of moving object has gained much of popularity because of its vast area of applications such as video surveillance, robot navigation human motion analysis, event detection, traffic analysis, anomaly detection, home and commercial security. Moreover, moving object detection is a very efficacious and interpretative action various complex processes such as object classification and tracking an object from video.

II. RELATED WORK

In this section, we have given a brief introduction of the vehicle detection in traffic surveillance cameras. Vision-based vehicle detection algorithms can be divided into three categories: motion-based approaches, hand-crafted feature-based approaches,andCNN-basedapproaches.Motion-based approaches include frame subtraction, optical flow, and background subtraction. Frame subtraction compute the differences of two or three consecutive frames sequences to detect the motion object. Frame subtraction is characterized by simple calculation and adapting dynamic background, but it is not ideal for motion that is too fast or slow. Optical flow calculates the motion vector of each pixel and tracks these pixels, but this approach is complex and time-consuming. Background subtraction such as GMM are widely used in vehicle detection by modeling the distribution of the background and foreground.

III. PROPOSED SYSTEM

The development of a vehicle theft alert and location identification system becomes more necessary for vehicle owners to ensure theft prevention where a vehicle is missing ,stolen or driven by an unauthorized person. The modern automative system, based on the convergence of information and communication technologies, is equipped with various functions to ensure vehicle safety and convenience of the owner. An owner-identification technology is an effective method to perform vehicle-theft detection. In the present work, we propose a system which will have tag on each vehicle for owner identification. Our system uses a RFID reader to read the tag details when the vehicle comes to the parking area and also provide OTP for customized authorization mobile number. Then the vehicle owner should enter the OTP generated to his mobile number for confirmation purpose. Once the person enter the correct OTP then the parking entrance motor will be turned ON. Even after some delay if the person fails to enter correct OTP the system will decide them as unauthorized person and capture their face image using the camera. Then the captured image will be sent to the owner to their mail ID and also the theft alert message igiven to the police station along with the GPS location of the vehicle.

IV. RESULTS

To evaluate the effectiveness of our proposed network, we compare our proposed network to the state of the art detectors on JSHD. Table 1 shows the results of our experiment. It is obvious that our network out performs the other algorithms. We achieve a significant overall improvement of 6.5% map over the state-of-the-art Faster R-CNN
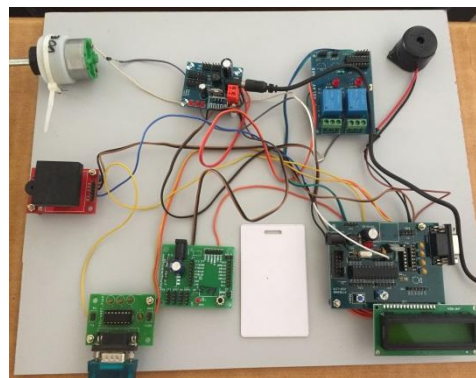
V. CONCLUSION AND FUTURE WORK

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In this project an automated system to identify the vehicle theft by unauthorized person detection has been presented. The objective of this project is to help reduce the amount of vehicle theft from the parking lots for a certain time period. The described image processing technique has been implemented to have capture the person image while parking. RFID and image processing is used vehicle theft prevention technique, because of its accuracy and cost effect

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BIOGRAPHY

K.Periyarselvam has received his B.E., degree in Electronics and Communication from bharadhidasan University, India and received his Master of Engineering in applied electronics from St.Peter's University, India.Presently he is working as a Assistant professor in GRT Institute of engineering and. technology India.

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