[18] Vehicle monitoring is a challenging task for video-based intelligent transportation system (V-ITS).

Nowadays, the V-ITS system has a significant socioeconomic impact on the development of smart cities and always demand to monitor different traffic parameters. It noticed that traffic accidents are exceeded throughout the world The increase in accidents and the percentage of deaths are due to the people that don’t abide by the traffic rules. To address these challenges, an improved V-ITS system is developed in this paper to detect and track vehicles and driver’s activities during highway driving. This improved V-ITS system is capable to do automatic traffic management that saves traffic accidents. It provides the feature of a real-time detection algorithm for driver immediate line overrun, speed limit overrun and yellow-line driving. To develop this V-ITS system, a pre-trained convolutional neural network (CNN) model with 4-layer architecture was developed and then deep-belief network (DBN) model was utilized to recognize illegal activities. To implement V-ITS system, OpenCV and python tools are mainly utilized. The GRAM-RTM online free data sets were used to test the performance of V-ITS system. The overall significance of this intelligent V-ITS system is comparable to other state-of-the-art systems. The real-time experimental results indicate that the V-ITS system can be used to reduce the number of accidents and ensure the safety of passengers as well as pedestrians. We also discuss vehicle recognition and classification utilizing vehicle attributes like color, license plate, logo and type, provide a detailed description of the advances in the field

[15]. Automated High-Speed Traffic Monitoring and Violation Detection Using RFID Technology.

The vehicle Identification is mainly done with special RFID readers. The main challenge is to be able to read RFID tags of high-speed vehicles. RFID readers are used for high-speed trains. Traffic monitoring is a wide area in research. Several methods exist for efficient real-time monitoring of the traffic, including RFID-based and CCTV camera-based systems. Several architectures for RFID-based systems have been proposed and utilized for traffic monitoring in some countries. As far as we know, none of the existing implementations utilize the RFID technology for traffic violation detection in high-speed roads. In this paper, a new architecture of using RFID technology in high-speed roads (highways and freeways) is presented; its problems and challenges are analyzed and a number of solutions are proposed. The proposed architecture consists of four hierarchical levels: Vehicle Identification, Row-level Processing, Road-level Processing, and Control Center. Each subsystem processes data of the detected vehicle at a higher level and passes the processed data to the next subsystem in a hierarchical manner. Also in this paper three sample algorithms are proposed in order to show how the architecture works in detecting traffic violations.