

# Usefulness of Big Data in Traffic Monitoring System

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## About the Study

In smart cities video surveillance system is used to control traffic. For this large amount of data (video footage) needs to be scrutinize to find people who are violating the traffic rules. The customary computer vision strategies can't investigate such an enormous measure of visual information produced in real-time. In this way, there is a requirement for visual big data analytics which includes handling and analyzing large scale visual information, for example, pictures or recordings to find semantic patterns that are helpful for interpretation.

These days' video surveillance frameworks become fundamental gear to keep a watch on any sort of criminal or anti law movement in current civilizations. The street traffic monitoring is most significant according to the perspective of following criminals, distinguishing traffic violators, recognizing road mishaps, gathering evidences for examination, and so on. Programmed decision making frameworks are alluring to get different sorts of traffic violators. Bikes are turning out to be extremely well known method of transportation all over the place; however, a big danger is related with this because that there is no security to the head part of human body. In this way, the Governments forcing on the utilization of wearing helmets to secure the head for the people who are riding bikes. Noticing the value of helmets, Governments have made it a punishable offense to ride a bicycle without helmet and have taken on manual techniques to get the people who are abusing the traffic rules. But, manual procedure for following individuals who are violating the traffic rules is certainly not a possible solution because of involvement of people, whose effectiveness might diminish over a long term. Mechanization of this process is profoundly desirable for solid and strong monitoring of these traffic rule violations. Likewise, it can remarkably decrease the amount of human resources required for traffic monitoring. To make the metropolitan regions as smart city, many nations are adopting frameworks including surveillance cameras at public spots for nonstop security monitoring.

This mechanized solution for traffic monitoring is likewise cost effective since it is utilizing the current framework and there is a significant reduction of labour required for doing the same. Notwithstanding, to embrace such automatic solutions, certain issues should be addressed like real-time execution, impediment, bearing of motion, temporal changes in climate conditions, and the nature of video feed.

Thus, the handling of huge amount of data in a time requirement way is a difficult undertaking. As such applications include assignments like division, highlight extraction, ordering, and tracking, in which a lot of data should be handled in short time to accomplish the objective of real-time implementation. As expressed, fruitful system for surveillance application ought to have helpful properties like real-time performance, adjusting, and robust to unexpected changes. Remembering these difficulties and desired properties, we propose a visual big data analytics system based solution for automated sensing of bike riders without helmets progressively from traffic surveillance camera network of a smart city. Till now numerous systems are proposed for street traffic monitoring utilizing surveillance cameras. A traffic detection framework incorporates object detection and following, behavioral analysis of traffic designs, number plate acknowledgment, and automated security and surveillance on video transfers caught by surveillance cameras. This structure gives an end-to-end solution for video streaming, stockpiling, and analyzing utilizing a cloud based Graphics Processor Unit (GPU) cluster. It enables traffic light room administrators via computerizing the process of vehicle identification and observing events of interest from the recorded video stream. An administrator just indicates the analysis criteria and the time of video streams to analyses. The streamed video then recover from the cloud storage, decoded and examined on a Hadoop based GPU cluster without administrator intervention. It decreases the inactivity in video investigation process by porting its register escalated parts to the GPU bunch. A programmed number plate acknowledgment framework utilizing cloud computing to acknowledge enormous information analysis, which empowers the location and following of a target vehicle in a city with a given licensed number plate. It realizes a completely coordinated framework with a surveillance network of city scale, programmed huge scale data recovery and investigation and combination of pattern acknowledgment to accomplish logical data analysis.

A visual big data analytics based system for constant detection of traffic rule violators who ride bike without helmets in a city scale surveillance camera network. The proposed system will likewise help the traffic police for distinguishing such violators in odd natural conditions viz; hot sun, rain, etc., Experimental

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outcomes exhibit the high classification performance for identification of bike rider and location of violators, separately. This structure can be extended for discovery of other rule infringement just as to identify and report number plates of violators.

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