**TITLE:** TWO WHEELER TRAFFIC INFRINGEMENT RECOGNITION USING YOLO V7 AND AUTOMATED TICKETING

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**ABSTRACT**

India's excessive population, rising commuter population, poor management of traffic signals, and rider mentality make traffic violation monitoring and control a big challenge. It is clear that physical police-based traffic monitoring is insufficient to concurrently monitor such high traffic volumes and trace offences. This has caused numerous infringers to go undiscovered. The offenders, in turn bring more serious accidents on the road that endanger both their own life and the lives of others. Thus, it is necessary to incorporate artificial intelligence (AI) to automatically detect two-wheeler infractions on Indian roads, such as not wearing a helmet, using a phone while driving, triple-driving, wheeling, and illegal parking, and eventually automate the ticketing process by logging the infractions and associated vehicle number in a database. We suggest utilizing a specially trained yolo-v7 + deep sort for infringement recognition and tracking and YOLO-v7 + tesseract for number plate detection and extraction. The traffic infringement recognition system developed can be used to automate issuing tickets for vehicle violation. The created system will be especially helpful in developing various safety-related policies, assisting in the enforcement of strict traffic regulations, and contributing to the development of a smart city ecosystem through the automated AI-based traffic violation and ticketing system.