IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 8, June 2025
Impact Factor: 7.67

Wireless Traffic Violation Detection

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Abstract: *This research paper presents a comprehensive solution for automated traffic rule enforcement through a wireless, IoT-integrated system. The proposed model leverages GSM and GPS modules, microcontroller-based architecture, and sensor arrays to detect, report, and record real-time traffic violations such as signal jumping, speeding, drunk driving, and unauthorized vehicle access. Beginning with an overview of current urban traffic challenges, the paper highlights the limitations of conventional manual enforcement and static camera-based systems. It then details the design and implementation of the smart system, including wireless data communication, GPS-based tracking, and automated penalty processing through smart databases. Advanced features such as accident detection, alcohol level sensing are incorporated to enhance road safety and enforcement transparency. The system's effectiveness is validated through prototype testing and real-world scenario simulations.*

Keywords: Traffic Violation Detection, IoT, GPS, GSM, Smart Transportation, Accident Detection, Embedded System

DOI: 10.48175/IJARSCT-28145