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(57) Abstract :
 The invention presents an advanced IoT-based accident detection and emergency response system designed to enhance road safety and reduce response times. By integrating multiple sensors—accelerometers, vibration sensors, and camera sensors—along with GPS and Wi-Fi communication modules, the system detects accidents in real time, assesses injury severity, and automatically sends alerts to emergency responders, hospitals, and the victim's family. It features a dual-phase notification mechanism, escalating minor accidents and providing immediate medical information to hospitals. Additionally, the system optimizes ambulance routing and traffic signal control to ensure rapid transport to the hospital. This framework offers a cost-effective, efficient solution for improving emergency response and potentially saving lives in critical situations.

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