## IJARSCT

International Journal of Advanced Research in Science, Communication and Technology



International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal



Volume 5, Issue 4, June 2025

## Intelligent Accident Detection and Smart Alert System Using IoT

Mr.Sagar Dhanake<sup>1</sup>, Mr. Kulange Aditya<sup>2</sup>, Ms. Patil Manasi<sup>3</sup>,

Ms. Murade Sakshi<sup>4</sup>, Ms. Kuchekar Akanksha<sup>5</sup>

Assistant Professor, Computer Engineering<sup>1</sup> Students, Computer Engineering<sup>2-5</sup> D. Y. Patil College of Engineering and Innovation, Pune, Maharashtra, India

Abstract: Road accidents are one of the leading causes of death globally, and delayed emergency response significantly contributes to the fatality rate. This paper presents the design and implementation of an IoT-based accident detection and smart alert system aimed at minimizing response time during road mishaps. The proposed system integrates a microcontroller Raspberry pi, vibration sensor, GPS, and GSM module to detect collisions in real time and automatically send alert messages with location coordinates to predefined emergency contacts. Upon detecting an accident, the system processes sensor data to confirm the event and immediately communicates the vehicle's location via SMS, enabling faster assistance. The prototype was successfully tested under various simulated accident conditions and demonstrated reliable detection accuracy and timely alert delivery. This solution offers a low-cost, real-time, and efficient method to improve road safety and emergency response systems, especially in developing regions.

**Keywords:** Incident Recognition, Alert System, Geolocation Technology, Mobile Communication Framework, Motion Sensor Technology



