
Helm X – Next-Gen Smart Helmet

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Abstract

This project presents Road accidents involving two-wheelers are a major cause of serious injuries and fatalities, mainly due to non-compliance with safety rules and delayed medical assistance. The Smart Helmet for Accident Prevention and Detection is an IoT-based safety system designed to enhance rider protection and ensure timely emergency response. The system ensures that the rider wears the helmet and is not under the influence of alcohol before allowing vehicle ignition. It continuously monitors sudden impacts or abnormal tilts to detect accidents. In case of an accident, the helmet automatically fetches the GPS location and sends an SMS alert with live location details to predefined emergency contacts. This system integrates sensors, a microcontroller, GPS, and GSM modules to provide both preventive and post-accident safety, thereby reducing fatalities and improving two-wheeler road safety.