

# GSM Based Smart Helmet for Accident Detection

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**Abstract:** *The Smart Helmet System is an innovative safety solution designed to improve the protection of motorcycle riders by using modern electronics and sensor technology. Road accidents involving two-wheeler riders are very common, and many serious injuries occur because riders do not wear helmets or ride under the influence of alcohol. The smart helmet project aims to reduce such accidents and enhance rider safety.*

*This system uses an Arduino ATmega328 microcontroller as the main controller along with sensors such as an MQ-3 alcohol sensor to detect alcohol in the rider's breath. If alcohol is detected above a certain limit, the system prevents the bike from starting, thereby avoiding drunk driving. The helmet can also include features like accident detection, automatic alerts, and safety monitoring.*

*The smart helmet works by integrating electronic components inside the helmet. When the rider wears the helmet properly and passes the safety checks, the system allows the vehicle to start. If unsafe conditions such as alcohol detection occur, the system restricts the ignition or gives warning signals.*

*The main objective of this project is to increase road safety, prevent accidents, and encourage responsible riding behavior by using smart technology. This project demonstrates how embedded systems and sensors can be used to develop intelligent safety devices for real-world applications..*

**Keywords:** *Smart Helmet System*

