

SMART HELMET SYSTEM USING GSM & GPS FOR ACCIDENT DETECTION

Submitted By:

1. G. Nikhil Kumar – 171FA05157
2. S. Tushar Chakravarthi – 171FA05362
3. N. Abhiram – 171FA05181

Department of ECE | VFSTR (Deemed to be University) | Academic Year: 2025–2026

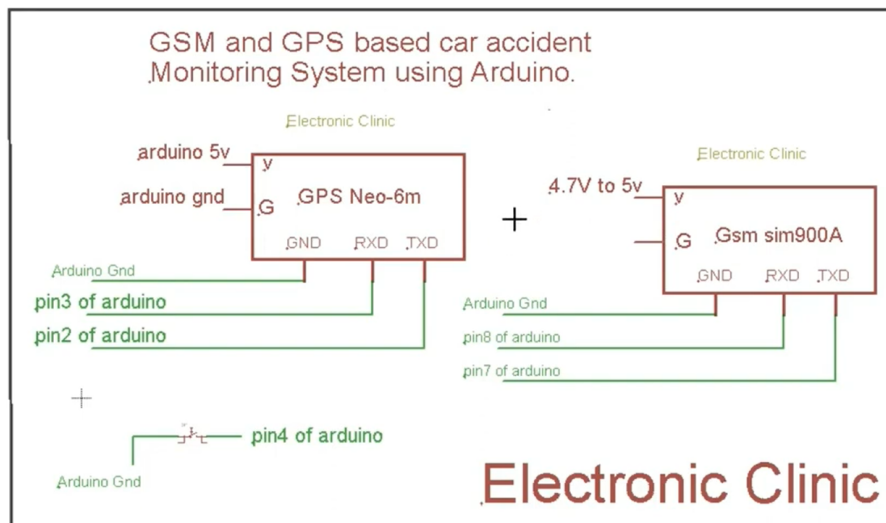
Abstract

This Smart Helmet detects motorcycle accidents and sends GPS coordinates to emergency contacts using GSM. It enhances rider safety and reduces delay in response time.

Introduction

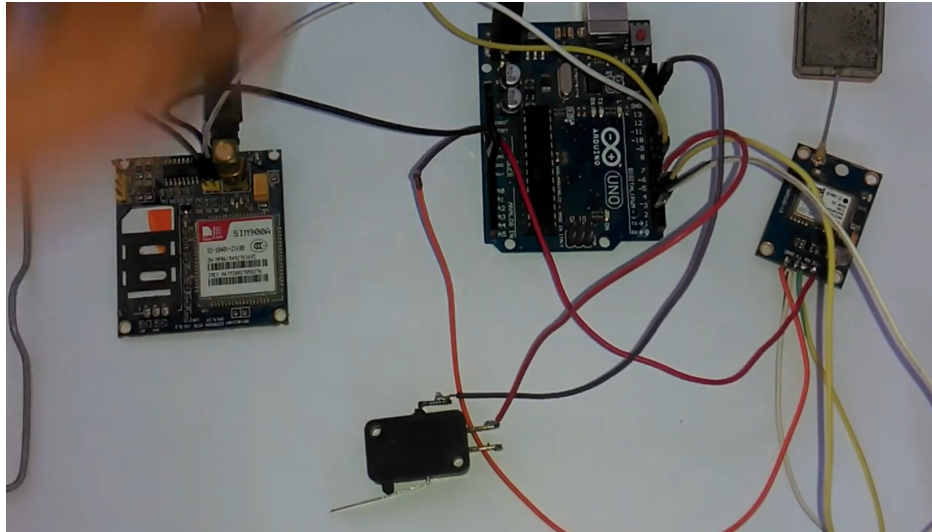
Motorcycle accidents result in delayed emergency help. This system uses GSM and GPS in a helmet to send alerts instantly when a crash occurs.

Circuit Diagram



GSM and GPS modules interface with Arduino. GPS sends coordinates, GSM sends alert SMS. Ground lines are connected commonly to ensure stability.

Hardware Implementation



The prototype shows physical integration of GSM, GPS, and tilt sensor with Arduino.

Working Principle

1. Tilt/impact detected 2. Arduino reads GPS data 3. GSM sends SMS to emergency contacts 4. LED turns ON during alert No user involvement required.

Conclusion

Smart Helmet is cost effective and enhances rider safety. It can be extended with alcohol detection and vehicle tracking features.

References

1. Arduino Documentation 2. SIM900A Hardware Guide 3. TinyGPS++ Library

Hardware Implementation - Prototype View

