Motorcycle Theft Prevention and Recovery Security System Using GSM and GPS

Prof. Omkar V. Kuthe[1], Mayuri Deshmukh[2], Ashwini Pingale[3], Atharva Dhotare[4], Manoj Gaikwad[5]

Diploma in Information Technology[1-5]

Mahavir Polytechnic, Nashik, Maharashtra, India

Abstract: *This paper presents a microcontroller-based Motorcycle Theft Prevention and Recovery Security System integrating GSM and GPS technologies. The system detects unauthorized vibration and ignition activity using sensor-based monitoring and embedded logic control. Upon detecting theft conditions, SMS alerts are transmitted to the registered owner while real-time geographic coordinates are obtained using GPS. A relay-based immobilization mechanism enables remote engine shutdown. Experimental results show fast detection response (2–5 seconds), SMS delivery within 5–15 seconds, and location accuracy of 3–8 meters. The proposed system is compact, cost-effective, and suitable for real-world deployment.*

Keywords*:* Motorcycle Theft, GSM, GPS, Microcontroller, Engine Immobilization, Vehicle Security