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(51) International classification	:A41D 13/018, G08B 21/02, A41D 13/00, A41D 13/05, A41D 13/01	(71)**Name of Applicant :** **1)Pranveer Singh Institute of Technology, Kanpur** Address of Applicant :Pranveer Singh Institute of Technology, National Highway (NH-19), Kanpur, Bhautipratappur, Uttar Pradesh Kanpur Uttar Pradesh India (72)**Name of Inventor :** **1)ANKIT JAIN** **2)Dr. PRADEEP GUPTA** **3)Dr. ANITA SHUKLA** **4)Dr. IMRAN ULLAH KHAN**
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(57) Abstract :

This invention presents a Smart Airbag Safety Jacket designed for accident prevention and emergency communication. Built for motorcyclists, senior citizens, and industrial workers, the jacket is equipped with motion sensors, a microcontroller, and communication modules. The MPU6050 sensor detects sudden falls or impacts, and the ESP32 microcontroller interprets this data to trigger an instant airbag inflation mechanism via a solenoid valve and CO_2 canister. The airbags, made of Nylon 6.6, offer physical protection to critical body areas. Simultaneously, a SIM800L GSM module sends real-time emergency messages with GPS coordinates from the NEO6M module to family or emergency services. Additional features include buzzers, LEDs, and a rechargeable power system. This invention addresses a critical gap in current safety gear by combining physical cushioning with real-time alerting. It offers an intelligent, wearable solution with potential applications in healthcare, transport, personal safety, and occupational hazard prevention.

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