DESIGN OF A FULL-BODY COVERED SAFETY AIRBAG SYSTEM FOR MOTORCYCLISTS

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Abstract: Motorcycle accidents often result in serious injuries, particularly due to the lack of adequate protection for riders. This project proposes the design of a full-body covered safety airbag system specifically tailored for motorcyclists to mitigate the severity of injuries in the event of a crash. The system integrates advanced sensors and algorithms to detect imminent collisions or loss of control, triggering the deployment of airbags across the rider's body. Key components include robust crash detection sensors, a central processing unit for real-time data analysis, and strategically placed airbags that inflate within milliseconds to shield the rider's head, torso, limbs, and back. The design considers ergonomic factors to ensure comfort and unrestricted movement while riding.

Through rigorous testing and simulations, the efficacy and reliability of the proposed system will be evaluated to meet safety standards and enhance overall rider protection. The ultimate goal is to contribute to reducing fatalities and serious injuries among motorcyclists, thereby promoting safer riding experiences. This research represents a critical step towards enhancing motorcycle safety through innovative technology, offering a promising solution to mitigate the impact of accidents and promote safer riding practices.

Keywords: Airbag system, Sensors, Algorithms.