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| **Title:** | A Smart Helmet: Ensuring Safety of Bike Riders | | |
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| **Abstract:** |  |
| The number of bike accidents is rising daily. Numerous people have suffered serious injuries and lost their lives as a result of bike accidents. Bike riders can reduce their risk of collisions by wearing helmets. The advantages of smart helmets include a decrease in the number of bike accidents. The primary cause of fatality in the majority of accidents is a lack of quick first aid and emergency medical assistance. One of the primary causes of this might be the ambulance's late arrival, with no one at the scene of the accident to provide information to the ambulance. The objective of this paper is to develop a smart helmet powered by renewable energy that will ensure the safety of bikers. The helmet includes an Arduino as a microprocessor, GSM for phone calls, GPS for tracking, and vibration sensors to detect accidents within a minute of detecting the accident, the system calls the registered number with a message and the precise position. Furthermore, if the user exceeds the average speed limit, the speed sensors will warn them. The rider can summon help in an emergency by activating the emergency switch. If the rider is not wearing a helmet, the bike will not start. Solar energy powers the prototype in its entirety. From the result analysis, it has been found that the developed helmet can provide safety to the bikers by conveying accurate and real-time information on accidents within minutes. | |