

Smart Helmet for Rider to Avoid Accident using IoT

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Abstract: *The around the world a large percentage of people die from road accident, especially in case of two wheelers. This may be avoided by emergency treatment of victim, wearing helmets and riding vehicles without consuming alcohol. The IoT-Based Bike Rider Safety Monitoring System enhances road safety by ensuring that the rider follows essential precautions before and during the ride. The system consists of two primary components: the Helmet Unit and the Bike Unit, which work together to enforce safety measures and provide real-time data through IoT cloud integration. This cloud-based system enables remote monitoring, alerts, and data-driven decision-making to improve accident prevention and emergency response. In this project we will use PIC 18f4520 microcontroller. All parameter will display on LCD display. Throughout the ride, all safety parameters—helmet status, alcohol detection, side stand position, Accident Detection and accident data—are continuously logged in the IoT cloud. This data can be accessed in real-time via a web dashboard or mobile application, allowing remote tracking of the bike's safety conditions.*

Keywords: Bike Rider Safety, IOT, Smart Helmet, Quick Alerting, Wireless Communication, Accident Detection