ABSTRACT

Ensuring rider safety using IOT enabled helmet to detect the person is wearing helmet or not. Nowadays, the society faces more bike accidents that sometimes leads to death. Even though the people have an awareness but they not wearing the helmet due to various reasons. So, introduced a smart helmet to reduce the accidents. This problem is addressed by IOT. The main objective of this system is to design a helmet that provides safety to the rider. The helmet unit uses the human touch sensor and the microcontroller and the RF transmitter to transfer the signal that the sensor detects whether it is worn by a human touch or not. The helmet unit sends signal to the bike unit through the RF transmitter. The bike unit uses the microcontroller and Arduino board and the RF receiver. The helmet unit transfer the signal to the RF receiver and the Arduino checks the signal based on the conditions provided. The Real-Time Operating System signals the bike in-case if a human wears the helmet the bike engine starts through the connections of Arduino board. Otherwise, the bike cannot start. This IoT-enabled helmet aims to enhance rider safety by ensuring compliance with helmet-wearing regulations, reducing the risk of injury in the event of an accident. The helmet's design also emphasizes user comfort and durability, ensuring it can be used effectively in various environmental conditions. Overall, the IoT-enabled helmet represents a significant step forward in leveraging advanced technology to enhance personal safety on the road. By ensuring that riders adhere to safety protocols, this innovative solution can contribute to reducing accident-related injuries and fatalities.