TOP STUDENT PROJECTS

Best innovations from VTU, Chintamani

PROJECT TITLE

Smart Bike Ignition with DL and Helmet



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PROBLEM STATEMENT

How might we help traffic police and two-wheeler riders automate the verification of driving licenses and helmet usage before a motorcycle can start, so that we eliminate manual checks, reduce head injuries, and create a self-enforcing system that works even without constant database access or vulnerable physical sensors?

SOLUTION

To address this issue, we developed a Smart Bike Ignition System using Arduino, RFID technology, and an IR sensor. The rider must first scan an authorized RFID card that represents a valid driving license. After successful verification, the system checks whether the rider is wearing a helmet using the IR sensor. Only when both conditions are satisfied does the relay activate and allow the bike to start. If either condition is not met, the bike remains off and alerts are provided through the LCD display, LED, and buzzer. The system enhances rider safety, encourages compliance with traffic regulations, and helps reduce accidents caused by unauthorized riding or failure to wear helmets.





SCAN ME

Technology stacks:

- Arduino UNO
- RC522 RFID Reader
- RFID Card/Tag
- IR Sensor