

ABSTRACT

FALL DETECTION NOTIFICATION SYSTEM FOR TWO-WHEEL VEHICLES USING MPU6050 SENSOR

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<19/441151/SV/16503>

Development of a notification system for detecting the indication of a two-wheeled vehicle falling using the MPU6050 sensor. This research involves testing with the sensor attached to both the right and left sides, mounted on a bicycle, and held by hand. The system utilizes the MPU6050 sensor to detect the vehicle's movements, including acceleration and changes in position. The sensor data is sent to an ESP32, which analyzes the motion and identifies emergency situations. When the angle values are within the range of more than 70 degrees and less than 90 degrees, or less than -70 degrees and more than -90 degrees, the system will send a notification indicating that the vehicle has fallen via wireless communication, specifically through the Telegram application, to the closest person to the rider. The use of the MPU6050 sensor, filtered with a Kalman filter, helps reduce noise in the sensor data. The test results demonstrate that this system can detect indications of a vehicle falling with a quick response time. This two-wheeled vehicle notification system using the MPU6050 sensor has significant potential to enhance emergency response in accident situations and help reduce the risk of more serious injuries.

Keyword: IMU MPU6050, ESP32, Telegram