Advanced Mobile Seismic Monitoring System

Abstract

Advanced Mobile Seismic Monitoring System integrates deep learning with portable sensors for real-time seismic analysis. It uses a Recurrent Neural Network architecture for real time data analysis and processing which collects data from acclerometer and alerts on 2.4GHz spectrum in case of any anomaly. It empowers rapid event detection, aiding researchers and emergency responders in risk mitigation and disaster management. The proposed system integrates hardware components, including the Raspberry Pi 5, MPU-6050 accelerometer module, and 2.4GHz antenna to create a seismic monitoring solution. The Raspberry Pi 5 serves as the central processing unit, providing computational power and connectivity for data analysis and transmission. Its compact size and low power consumption make it ideal for deployment in portable monitoring systems. The MPU-6050 accelerometer module, the system can accurately detect and measure seismic vibrations in multiple axes. The 2.4GHz antenna facilitates wireless communication between monitoring nodes, enabling real-time data transmission and remote monitoring capabilities upto an optimum range of approximately 200 acres.

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