

Face Monitoring for Alzheimer's Patients using Accelerometer Data

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Abstract: *Alzheimer's disease is a progressive neurodegenerative disorder that causes memory loss and cognitive decline, making continuous health and behavioral monitoring essential for patient safety. This project presents an IoT-based Alzheimer's Patient Monitoring System designed to track vital health parameters such as heart rate, SpO₂, body temperature, and movement patterns in real time. The system integrates multiple sensors with an ESP32 microcontroller to collect and transmit data seamlessly to a cloud platform.*

The data collected from the sensors are processed and uploaded to the ThingSpeakIoT cloud for continuous visualization and analysis. An emergency switch enables immediate alert messages to caregivers via Telegram, ensuring timely assistance during health emergencies or falls. To enhance prediction and decision-making, machine learning algorithms are incorporated to analyze historical data and identify abnormal trends or potential risks. By combining IoT monitoring and intelligent prediction, this system offers a cost-effective, real-time, and scalable solution to improve Alzheimer's patient safety, reduce caregiver burden, and support remote healthcare monitoring.

Keywords: *Alzheimer's disease*