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Observation Panel for Disease Analysis

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Abstract: *The Observation Panel for Disease Analysis enhances healthcare diagnostics by combining non-invasive wearable sensors with a cloud-based real-time monitoring system. Traditional symptom-based methods often struggle due to overlapping indicators among diseases, resulting in delayed diagnoses. This system employs a wearable device integrated with medical-grade sensors like the MAX30102 (for SpO□ and heart rate) and MLX90614 (for body temperature), transmitting data wirelessly via WiFi to a centralized web-based dashboard. The platform supports secure, role-based access for patients, doctors, and caregivers, ensuring authenticated data management. Real-time health metrics such as heart rate, SpO□, temperature, and ECG are displayed using interactive visualizations, while AI-driven analytics monitor trends to detect anomalies at an early stage. Additionally, the system supports telemedicine features, allowing for seamless remote consultations and continuous patient monitoring.*

Keywords: Non-invasive wearable sensors, Real-time health monitoring, Patient-caregiver-doctor interface, Predictive health analytics

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