

Stress Detection System using Machine Learning and Sensors

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Abstract: *This project presents a novel stress detection system that leverages machine learning and sensor technology to monitor and assess stress levels in real-time. As stress has become a widespread concern affecting mental health, our system integrates wearable sensors—such as heart rate monitors, galvanic skin response sensors, and accelerometers—to capture physiological data indicative of stress. The project involves several key components: data collection and preprocessing, feature extraction, and the development of machine learning models capable of accurately classifying stress levels based on the sensor data. Various algorithms, including Support Vector Machines and Neural Networks, will be employed and optimized for performance. The system is designed to provide real-time feedback to users, offering insights and personalized recommendations for stress management based on detected levels. A user-friendly interface will enable individuals to track their stress over time, fostering greater awareness and encouraging proactive coping strategies.*

Keywords: Stress Detection, Machine Learning, Wearable Sensors, Real-Time Monitoring, Physiological Data, Stress Management, Personalized Feedback.