

DETECTING STRESS USING MACHINE LEARNING TECHNIQUES

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SERIAL NO.	TITLE OF PAPER	NAME OF AUTHOR	PUBLISHED YEAR	REMARKS
1.	Machine Learning and IoT for Prediction and Detection and Stress	Purunendu Shekhar Pandey	2017	<ul style="list-style-type: none">• It is difficult to predict the age from heartrate as it is non-linear, but we can predict whether the person is healthy or unhealthy based on his heartbeat.• Based on heartbeat, we can predict whether the person is stressed or not.• ML is used to predict the condition of the patient and IoT(Remote Stress Detector) is used to communicate the patience about his/her acute stress condition.• Components used are: Node MCU(Supports micropython), Pulse Sensor, Server.• Supervised Learning, Support Vector Machine(SVM).• Test Accuracy: 66%-68%.• Algorithms Used: VF-15,Naïve Bayes approach.• SVM and Logistic Regression show improvement over Naïve Bayes and VF-15.
2.	Predicting Anxiety, Depression and Stress in Modern Life using machine Learning algorithms	Anu Priya, Shruthi Garg, Neha Prerna Tigga	2019	<ul style="list-style-type: none">• Data were collected from employed and unemployed individuals across different cultures and communities through the Depression, Anxiety and Stress Scale questionnaire.• After applying different methods, it was found

				<p>that classes were imbalanced in the confusion matrix.</p> <ul style="list-style-type: none"> • F1 score model was added, which helped to identify the best accuracy model among all the algo applied model. • Algorithms used: Random Forest Tree, Support Vector Machine, Convolution Neural Network, K-Nearest Neighbour. • Best results were provided when Convolution Neural Network was applied with the accuracy of 78%.
3.	A Review On Mental Stress Detection using Wearable Sensors and Machine Learning Techniques	Shruthi Gedam, Sanchitha Paul	2021	<ul style="list-style-type: none"> • Includes sensory devices like wearable sensors, ECG, EEG, PPG. • Symptoms considered are: Cognitive, Physical, Emotional, Behavioral. • Uses Frequency Domain Indices and Non-Linear Indices. • Algorithms used: Fuzzy Logic Algorithm, K-Nearest Neighbor Algorithm, SVM, logistic Regression, Decision Tree Algorithm, Naïve Bayes, Artificial Neural Network, Random Forest Algorithm. • It is observed that HR and GSR were the most regularly used sensory signals because they gave the most promising results and high accuracy for detecting stress and its levels.

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