

## Literature Survey

S.No.	Title of the Paper	Name Of Authors	Published year	Remarks
1.	A Decision Tree Optimised SVM model for stress detection using Bio signals	Alana Paul Cruz, Aravind Pradeep, Kavali Riya Sivasankar, Krishnaveni KS	2020	<p><b>Features:</b> ECG bio signals, EDR (ECG Derived Respiration), Respiration Rate, QT interval.</p> <p><b>Algorithms:</b> Optimised SVM using decision trees</p> <p><b>Advantages:</b> Better Accuracy (96.3%). Determining ECG can easily derive information about respiratory signals without using any extra sensors.</p>
2.	Stress Detection using deep neural networks	Russell Li, Zhandong Liu	2020	<p><b>Features:</b> Physiological signals from chest worn and wrist worn sensors.</p> <p><b>Algorithms:</b> 1-dimensional convolutional neural network and a multilayer perceptron neural network.</p> <p><b>Advantages:</b> The deep convolutional neural network achieved 99.80% and 99.55% accuracy rates for binary and 3-class classification, respectively. The deep multilayer perceptron neural network achieved 99.65% and 98.38% accuracy rates respectively.</p> <p><b>Disadvantages:</b> The test dataset was very small (consisting only of 15 humans.)</p>
3.	Machine Learning and IoT for Prediction and Detection of Stress	Mr. Purnendu Shekhar Pandey	2017	<p><b>Features:</b> Heartbeat rate</p> <p><b>Algorithms:</b> Used ML algos along with IoT. Used algorithms include, VF-15, Naive Bayes along with SVM and Logistic Regression.</p>

				<p><b>Advantages:</b> Uses heart rate as a steppingstone. Gives accuracy of about 66-68%.</p> <p><b>Disadvantages:</b> Low accuracy compared to other models.</p>
4.	Stress Detection with Machine Learning and Deep Learning using Multimodal Physiological Data	Pramod Bobade, Vani M.	2020	<p><b>Features:</b> Three Axis Acceleration (ACC), ECG, BVP, body temperature, Electrodermal Activity(EDA).</p> <p><b>Algorithms:</b> K-Nearest Neighbour, Linear Discriminant Analysis, Random Forest, Decision Tree, AdaBoost and Kernel Support Vector Machine. Feed forward deep learning artificial neural network for three-class and binary classifications.</p> <p><b>Advantages:</b> Accuracies of up to 81.65% and 93.20% for three-class and binary classification problems respectively. Using deep learning, the achieved accuracy is up to 84.32% and 95.21% respectively.</p>
5.	Automatic Stress Detection using wearable sensors and machine learning: a review	Shruti Gedam, Sanchita Paul	2020	<p><b>Features:</b> heart rate, heart rate variability and skin conductance.</p> <p><b>Algorithms:</b> SVM, Random Forest, K-nearest neighbour.</p> <p><b>Advantages:</b> Physiological signals can be used to detect stress using wearable sensors and ml algo. Effective and affordable.</p> <p><b>Disadvantages:</b> Increased Computation time.</p>