LITERATURE SURVEY.

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| SR NO | TITLE OF THE PAPER | NAME OF AUTHORS | PUBLISHED YEAR | REMARKS |
| 1. | Stress Detection with Machine Learning and Deep Learning using Multimodal Physiological Data | Pramod Bobade.  Vani. M | 2020 | 1. This multimodal dataset is the collection of motion data and physiological features of 15 subjects from both a chest-worn device RespiBAN Professional and a wrist-worn device Empatica .Six machine learning (Random Forest, Decision Tree, AdaBoost, k-Nearest Neighbour, Linear Discriminant Analysis and Kernel Support Vector Machine) and a deep learning 2. artificial neural network (ANN) were used and their performance was compared.The proposed work has recognized two classification tasks on the basis of the emotional states of a person for the 3. detection of stress.Provided all the features as mentioned above and using the machine learning classifiers, the accuracy has reached up to 81.65% and up to 93.20% in the case of three-class and binary classification problems, respectively. |
| 2. | A Decision Tree Optimised SVM Model for Stress Detection using Biosignals. | Alana Paul Cruz,  Aravind Pradeep, Kavali Riya Sivasankar and Krishnaveni K.S | 2020 | 1. Stress or Distress happens when a person faces mental strain due to external or internal factors. Stress affects an individual mentally, physically, socially and in many aspects. 2. So, giving timely guidance to the patients is of great significance. For that a more accurate model for detecting stress is necessary for helping doctors in consulting. 3. the model was trained using Cubic SVM with Gaussian Kernel. For a better model, here we have used Tree Optimised SVM which is a combination of Decision Tree and SVM algorithms. 4. The main enhancement of this Tree Optimised SVM model is that it shows improvement in Sensitivity and Elapsed. It is able to generate an accuracy of 96.16%. |
| 3 | Automatic Stress Detection Using Wearable Sensors and Machine Learning | Shruti Gedam.  Sanchita Paul | 2020 | 1. Today’s fast-paced world, mental stress is very common. Stress can be caused due to situations or events that put pressure on mind and body of a person. Reaction to stress is different for everyone as the capacity of dealing with tough or demanding situations vary for person to person. 2. In this paper, some previous approaches of automatic stress recognition systems who used sensors and machine learning are discussed in detail. In these, physiological data is extracted using some stressor tests on the people. Some common stressor tests includes arithmetic calculations, questionnaire, mental tasks and working out in gym. 3. There are a diversity of machine learning algorithms which are appropriate for stress detection. Among them Support Vector Machines (SVM), Logistic regression, K-Nearest Neighbor, Decision tree and Random forest are most common. 4. They analysed bandpower features from EEG signals and used SVM as classifier which give a three-level of stress recognition system with 75% accuracy and two-level stress system gives 88% and 96% accuracy for the two stressors respectively. 5. The system achieved highest average classification accuracy of 74.43% using K-NN algorithm over SVM. This system observed a correlation of bandpower ratios of different bands which are obtained from EEG signals from frontal area of brain. 6. Quadratic discriminant analysis (QDA) and Support Vector Machine (SVM) classifiers were used here, among them SVM gives best accuracy of 94.33% for five-level mental stress identification. |
| 4. | Machine Learning and IoT for Prediction and  Detection of Stress | Mr.Purnendu Shekhar Pandey | 2017 | 1. Remote Stress detector is an IOT device which can detect the stress level of a person using his/her heartbeat reading. When people are stressed or nervous, there is an increase in their heartbeat just like there’s a spike in the heartbeat when a person is having a heart attack, scientifically known as myocardial infarction. 2. Each device is individual specific and needs to be calibrated for it to function properly. During calibration the person should be in a relaxed mood and should be resting. 3. The heartbeat readings are pushed to the server where they are filtered using a user’s network id to keep track of readings for a particular individual. They are visually shown using a connected scatter plot. 4. Two algorithms for classification are being used VF – 15 algorithm, which is a feature interval based classifier, which creates classification intervals during training and use it to test the classifier gives an accuracy of 62 % and Naive Bayes approach which is a Bayesian classification algorithm gives 50% of accuracy while testing. 5. Using Logistic Regression and SVM we get an accuracy of 66% and 68 % respectively, which shows an improvement in accuracy after using SVM. |
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