

Literature Survey “Stress Recognition Using Machine Learning”

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Abstract:

Stress is a very common part of everyday life that most people have to deal with in various situations. But chronic stress, or high levels of stress, can affect our safety and disrupt our normal lives. Early detection of mental stress can prevent many stress-related health problems. When a person is stressed, various biosignals such as thermal, electrical, impedance, acoustic, optical, etc. change significantly, and using these biosignals, stress levels can be identified. We offer different machine learning and deep learning techniques for the detection of stress in individuals using multimodal datasets recorded from wearable physiological and motion sensors, which can prevent a person from developing various stress-related health problems.

Keywords —Stress, Machine Learning, Recognition, Programs.

I. INTRODUCTION

Stress detection is a difficult task because people can use many words in their messages to indicate if someone is psychologically stressed. Stress, anxiety, and depression threaten people's mental health. Everyone has reasons for having a stressful life. People often share their feelings on social media platforms like on Instagram in the form of posts and stories, and on Reddit in the form of life tips on subreddits. Over the past few years, many content creators have come forward to create content that helps people with their mental health. Many organizations can use stress detection to find out which social media users are stressed so they can help them quickly. So, if you want to learn how to use machine learning to detect stress on social media posts, this post is for you. In this article, I will walk you through how to use Python machine learning for stress detection.

II. LITERATURE SURVEY

A. *Stress Detection in Working Place(2017)*

In this stress management system, the detection of stress levels that disrupt our socio-economic lifestyle plays an important role. A total of 17 distinct traits have been identified for further study.

Ramana Murthy, the author of this article, achieved a higher accuracy of 92.75 using the SVM classifier with RBF Kernel.

B. *One Millisecond Face Alignment with an Ensemble of Regression Stresses(2014)*

This paper addresses the face alignment problem from a single image and proposes an algorithm to accurately estimate the location of faces in a computationally efficient way, by estimating the location

ns of facial landmarks. The frame reduces bugs faster. Regression trees significantly improved the results.

C. Support Vector Slant Binary Tree Architecture for Facial Stress Recognition Based on Gabor and HOG Feature(2018).

Facial pressure recognition with histogram information. The system is realized by combining the diagonal binary tree graph SVM Abd. The accuracy of the system offered by Balian Hengyang Presidion is about 86.7%. Only the face or different parts of the face, such as the eyes, nose, and mouth, are considered stress features

D. Stress Recognition using Face Images and Facia Landmarks (2018).

In this article, they propose a stress recognition algorithm using facial images and facial landmarks. Stress recognition using information about eye, mouth, and head movements over time. With the help of Blosignals we can see the most sensitive parts of the body. Use Brocino.

III.Purposed system

In this proposed system, we will use a CNN (Central Neural Network) where processing is used.

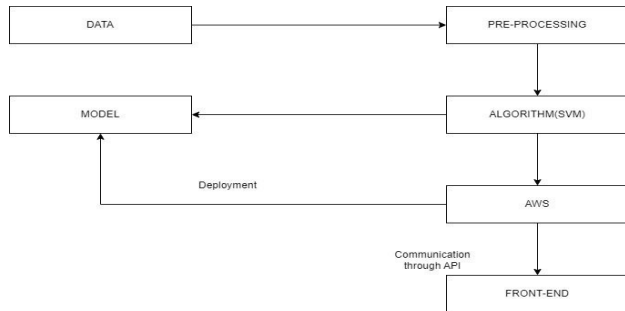


Fig 1: Shows the System architecture of the System

A. Dataset: -
 We will focus on creating a dataset using various images and the dataset available on Kaggle.

B. Data Pre-processing: -
 Since there are several other images, it is necessary to clean the data. First, we remove unwanted images from the dataset.

C. ModelBuilding: -
 First, we created the registration page where we confirm the entities like name, address, email id, gender, date of birth, password, password, etc.

D.Feature Extraction: -
 First, we train and test datasets. After the dataset is trained, data preprocessing is performed, and then we apply CNN (Central Neural Network).

E. ExpectedResult: -
 As an experimental output, our system will generate an output containing the Stress percentage of the dataset input.

We will try to study many algorithms for image pre-processing like: -

1] Central Neural Network

A convolutional neural network (CNN or convnet) is a **subset of machine learning**. It is one of the various types of artificial neural networks which are used for different applications and data types.CNN is a powerful algorithm for image processing. These algorithms are currently the best algorithms we have for the automated processing of images. Many companies use these algorithms to do things like identifying the objects in an image. Images contain data of RGB combination.

2] Support vector machines

Support vector machines (SVMs) are a set of supervised learning methods used for classification, regression, and outliers' detection. The advantages of support vector machines are: Effective in high dimensional spaces. Still effective in cases where number of dimensions

The goal of the SVM algorithm is to create the best line or decision boundary that can segregate n-dimensional space into classes so that we can easily put the new data point in the correct category in the future. This best decision boundary is called a hyperplane.

III.CONCLUSION

We propose a stress recognition method using facial landmarks and shapes in facial images. As a result of experiments, we confirm that pressure recognition performance is further improved when facial cues are used. Facial features better detect stress because they allow you to better understand the movements of the eyes, mouth and head. We also found that performance can be improved by better identifying stress-related information when using appropriately sized grayscale face images.

III.REFERENCES

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