**Stress Detection in IT Professionals by Image Processing and Machine Learning**

The main motive of our project is to detect stress in the IT professionals using vivid Machine learning and Image processing techniques. Our system is an upgraded version of the old stress detection systems which excluded the live detection and the personal counseling but this system comprises of live detection and periodic analysis of employees and detecting physical as well as mental stress levels in his/her by providing them with proper remedies for managing stress by providing survey form periodically. Our system mainly focuses on managing stress and making the working environment healthy and spontaneous for the employees and to get the best out of them during working hours.

**EXISTING SYSTEM:**

In the existing system work on stress detection is based on the digital signal processing, taking into consideration Galvanic skin response, blood volume, pupil dilation and skin temperature. And the other work on this issue is based on several physiological signals and visual features (eye closure, head movement) to monitor the stress in a person while he is working. However these measurements are intrusive and are less comfortable in real application. Every sensor data is compared with a stress index which is a threshold value used for detecting the stress level.

**DISADVANTAGES OF EXISTING SYSTEM:**

* Physiological signals used for analysis are often pigeonholed by a Non-stationary time performance.
* The extracted features explicitly gives the stress index of the physiological signals. The ECG signal is directly assessed by using commonly used peak j48 algorithm
* Different people may behave or express differently under stress and it is hard to find a universal pattern to define the stress emotion.

**Algorithm**: Bayesian Network, J48

**PROPOSED SYSTEM:**

The proposed System Machine Learning algorithms like KNN classifiers are applied to classify stress. Image Processing is used at the initial stage for detection, the employee’s image is given by the browser which serves as input. In order to get an enhanced image or to extract some useful information from it image processing is used by converting image into digital form and performing some operations on it. By taking input as an image and output may be image or characteristics associated with that images. The emotion are displayed on the rounder box. The stress level indicating by Angry, Disgusted, Fearful, Sad.

**ADVANTAGES OF PROPOSED SYSTEM:**

* Output in which result is altered image or report that is based on image analysis.
* Stress Detection System enables employees with coping up with their issues leading to stress by preventative stress management solutions.
* We will capture images of the employee based on the regular intervals and then the tradition survey forms will be given to the employees

**Algorithm**: K-Nearest Neighbor (KNN)

**SYSTEM REQUIREMENTS:**

**HARDWARE REQUIREMENTS:**

* System : Intel Core i7.
* Hard Disk : 1 TB.
* Monitor : 15’’ LED
* Input Devices : Keyboard, Mouse
* Ram : 16 GB.

**SOFTWARE REQUIREMENTS:**

* Operating system : Windows 10.
* Coding Language : Python
* Tool : PyCharm, Visual Studio Code
* Database : SQLite

**REFERENCE:**

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