Dristhi Yadav And Richa Singh  
Project Proposal

Date : 01/19/2019

Project Title :

Application of Machine Learning in Wearable Devices for Stress Detection Capabilities

# Overview

## Project Background and Description

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|  | We have all come to accept stress as an integral part of our lives. Whether it is managing homes, kids, office and work, stress is always lingering. While low levels of stress is manageable and keeps us going, prolonged high stress levels can have serious impact on our health physical and mental. In situations of stress our body produces chemical/hormonal reactions to prepare to handle the situation. These get physiologically manifested in increased heart rate, heavy breathing, increased blood pressure and tightening of muscles. It takes an emotional toll through increased agitation, frustration, anxiety and depression. Prolonged high stress levels can lead to increased susceptibility to cardiovascular disease, obesity and mental health problems among other health issues.  Another thing that has become an integral part of our lives are wearable tracking devices such as watches with fitness tracking capabilities. While fitness tracking has been incorporated very effectively in these devices, mental and physiological tracking is now being increasingly researched to be included as a capability in these devices. Wearable devices are no longer viewed as solely timepieces but are gradually being enhanced to include health data reading capabilities. These devices are now capturing data for heartrate and EKGS. Given the immense scope in capabilities of such devices we would like to study the possibility of incorporating stress detection in such devices.  Team Members   1. Dristhi Yadav 2. Richa Singh |

## Project Scope

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|  | For this project we will be utilizing machine learning techniques and using libraries such as Sci-Kit Learn and/or another machine learning library. Python Pandas, Matplotlib, java script will be used for data organization, analysis and visualization.  **Data** is derived from UCI Machine Learning Repository  https://archive.ics.uci.edu/ml/datasets/WESAD+%28Wearable+Stress+and+Affect+Detection%29  WESAD (Wearable Stress and Affect Detection) Data Set shared by Philip Schmidt, Robert Bosch GmbH, Corporate Research, Germany, firstname.lastname '@' de.bosch.com and Attila Reiss, Robert Bosch GmbH, Corporate Research, Germany, firstname.lastname '@' de.bosch.com  **GitHub Link** <https://github.com/Richa309/UCIDB_Final_Project> |