

# Depression Prediction using Emotion and Speech Analysis to Prevent Suicide

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**Abstract:** *Suicide might be considered as one of the most serious social health problems in the modern society. Suicidal ideation or suicidal thoughts are people's thoughts of committing suicide. It can be regarded as a risk indicator of suicide. India is among the top countries among in the world to have annual suicide rate. Social networks have been developed as a first rate factor for its users to communicate with their interested buddies and proportion their captions, photos, and videos reflecting their moods, emotions and sentiments. To increase and put in force a version which takes a facial expression images as an enter and symptoms. On the basis of that it predicts the reput of that patient whether or not he/she has been detected or now not detected for depressed. We can train version using photographs & will use it for prediction. Image captioning can be accomplished after prediction for higher visualization of report. We will also use text mining (NLP) technique to predict melancholy the usage of signs furnished with the aid of person.*

*At final we are able to make final choice primarily based on above two techniques. To generate detailed dashboard of user disease status and to design webapp for above system. We will use CNN algorithm for speed up detection of depressed character instances and approach to become aware of high quality answers of mental health troubles. We suggest system learning method as an efficient and scalable technique. We document an implementation of the proposed method. We've evaluated the efficiency of our proposed technique the usage of a set of various psycholinguistic features. We show that our proposed method can extensively improve the accuracy and category blunders price.*

**Keywords:** *Suicide rate, Emotions, Convolutional Neural Network.*

## 1. INTRODUCTION

Suicide is an important issue in the Indian context. More than one lakh (one hundred thousand) lives are lost every year to suicide in our country. In the last two decades, the suicide rate has increased from 7.9 to 10.3 per 100,000. There is a wide variation in the suicide rates within the country. The southern states of Kerala, Karnataka, Andhra Pradesh and Tamil Nadu have a suicide rate of > 15 while in the Northern States of Punjab, Uttar Pradesh, Bihar and Jammu and Kashmir, the suicide rate is < 3. This variable pattern has been stable for the last twenty years. Higher literacy, a better reporting system, lower external aggression, higher socioeconomic status and higher expectations are the possible explanations for the higher suicide rates in the southern states.

In 2016 the number of suicides in India had increased to 230,314. Suicide was the most common cause of death in both the age groups of 15-29 years and 15-39 years. About 800,000 people die by suicide worldwide every year, of these **135,000** (17%) are residents of India, a nation with 17.5% of world population.

## 2. RELATED WORK

Literature survey is the most important step in any kind of research. Depression Detection using Emotion Artificial Intelligence. Facial emotion recognition in real-time and static images. Short Research Advanced Project: Development of Strategies for Automatic Facial Feature Extraction and Emotion Recognition .Emotion recognition and drowsiness detection using Python .Depression Detection by Analyzing Social Media Posts of User

## 3. EXISTING APPROACH

The existing systems are capable of detecting depression either through video or text. They use SVM, KNN which become inefficient when larger datasets are involved. Datasets trained are either bag of words without any day to day phrases or the images.

## 4. PROPOSED APPROACH

In proposed system we are using people's videos and their text inputs. System uses CNN for processing video data and NLP + Naïve Bayes Classifier for text processing. If user found depressed, then further categorization of depression is done through video interview & accordingly he/she is provided with motivational material.

## 5. METHODOLOGY

Face of the subject is captured using the camera module. This detected face is processed and the emotions are classified as either positive or negative emotions. The detected image

is processed to identify the face of the subject using Convolutional Neural Network (CNN) algorithm.

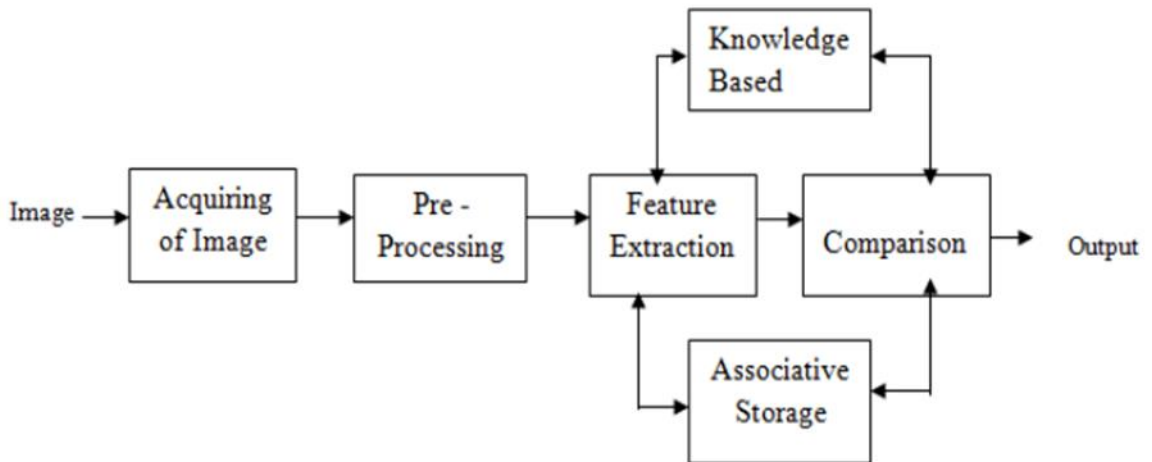


Fig.1: Methodology Of the system

This is plotted and an increase in the negative emotion can be inferred as increase in stress

## 6. FIGURES

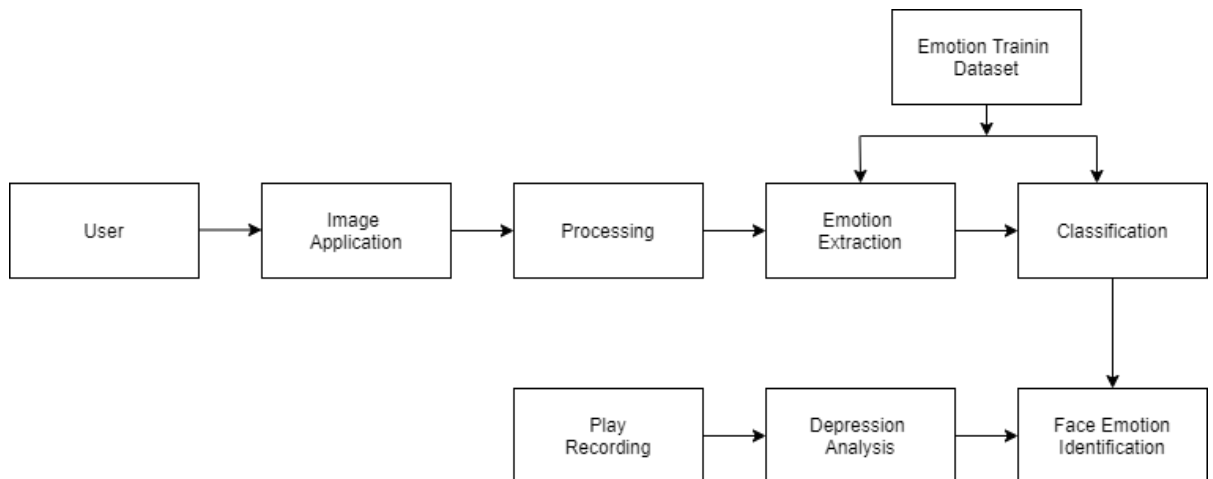


Fig.2: Architecture Diagram

## 7. CONCLUSION & FUTURE SCOPE

### CONCLUSION

Thus, the proposed system has met all the requirements of depression detection through video and text with satisfactory accuracy considering both the forms of datasets. And also considers some basic actions to help the labeled depressed person.

### FUTURE SCOPE

Having observed that people tend to express their feelings on social media, this type of software integration can lead to early detection of depression. If software used explicitly for Depression Detection (without integration on other platforms) then provides a remote service making it easier for people to assess their mental health. Will be helpful as Psychiatrist's tool for dealing with patients effectively.

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