

SENTIMENT ANALYSIS FOR DEPRESSION DETECTION



DIP-DIVE



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**Everyone
Can
Fight**

”



INTRODUCTION

- Everyone has right to live a healthy, peaceful and happy life. Hence, it is required to set one free from these emotional sufferings.
- So, we bring into picture, our web application,
- “DIP-DIVE” , which will prove one of the method for identifying depression at an early stage.
- It uses the concept of ‘Sentiment analysis’ which is the computational study of people’s opinions, sentiments, emotions, and attitudes.
- This fascinating problem is increasingly important in business and society.
- It is a valuable resource for researchers and practitioners in natural language processing, computer science, management sciences, and the social sciences.

MOTIVATION



- Depression is a common mental illness and a leading cause of disability worldwide. Globally, more than 300 million people are estimated to suffer from depression every year
- However, at early stages of depression, around 70% of the patients would not consult doctors, which may take their condition to advance stages.
- There is an urgent need to be some methods developed. Hence, some automatic and reliable means of depression recognition are required.
- Hence, we are trying to implement one of the applications of Artificial intelligence used for sentiment analysis in Depression Detection.

OBJECTIVE

- To contribute in current medical care, we use sentiment analysis technique to extract a representation of depression cues in text, audio and video for automatic depression detection.
- So, the aim is to focus on creating a depression detection system from text, video & audio analysis.
- Sentiment Analysis and Natural Language Processing methods will be used to develop this system.
- The system will classify text in positive or negative depending on the emotions inferred from user input

PROBLEM STATEMENT



- To develop a system to detect whether a person is suffering from depression or not using the textual, visual and speech features. These features will be a helping hand in the diagnosis of depression.
- Hence, emphasis is given to approaches utilizing various artificial intelligent methods for detection of depression. The system will read the sentimental signs from the user and process the result as positive, negative or mild.

LITERATURE SURVEY

| Ref No. | Paper | Publisher | Inference |
|---------|--|--|---|
| 1 | Application of Various Machine Learning Techniques in Sentiment Analysis for Depression Detection | IJITEE (Volume-8, Issue-10S, August 2019) | The study of various machine learning methods used for detection of depression |
| 2 | Machine Learning-based Approach for Depression Detection in Twitter Using Content and Activity Features | arXiv by HS AlSagri · 2020 | A quantitative study is conducted to train and test various machine learning classifiers to determine whether a twitter account user is depressed, from tweets initiated by the user or his/her activities on Twitter |
| 3 | Sentiment Analysis in Social Media Data for Depression Detection Using Artificial Intelligence: A Review | SpringerNet Computer Science (2022) : article/10.1007/s42979-021-00958-1 | To extract the features from the pre-processed data, feature extraction techniques are utilized. Utilizing classification procedure, the data was polarized into sentiment classes predicated on the sentiment values which was done by sundry machine learning and deep learning algorithms. |

LITERATURE SURVEY

| Ref No. | Paper | Publisher | Inference |
|---------|--|--|--|
| 4 | Sentiment Analysis of the COVID-related r/Depression Posts | arXiV (2108.06215) | In this study, they perform topic modelling and sentiment analysis of online depression discussions, using SVM and naïve bayes. |
| 5 | Depression Detection using Machine Learning | International Journal of Research and Advanced Development (IJRAD), http://www.ijrad.com/docs/v4n2/A126.pdf | Study was conducted using 4 classifiers. These classification algorithms are Naïve Bayes Algorithm, Decision Tree Algorithm, KNN Algorithm and Random Forest Algorithm |

- Evaluate the person based on his textual, vocal or visual cues.
- Eliminates the chances of visiting doctors if depression level is minute.
- Diagnosis can be done at early stage.
- Valuable for both research and clinical practice.

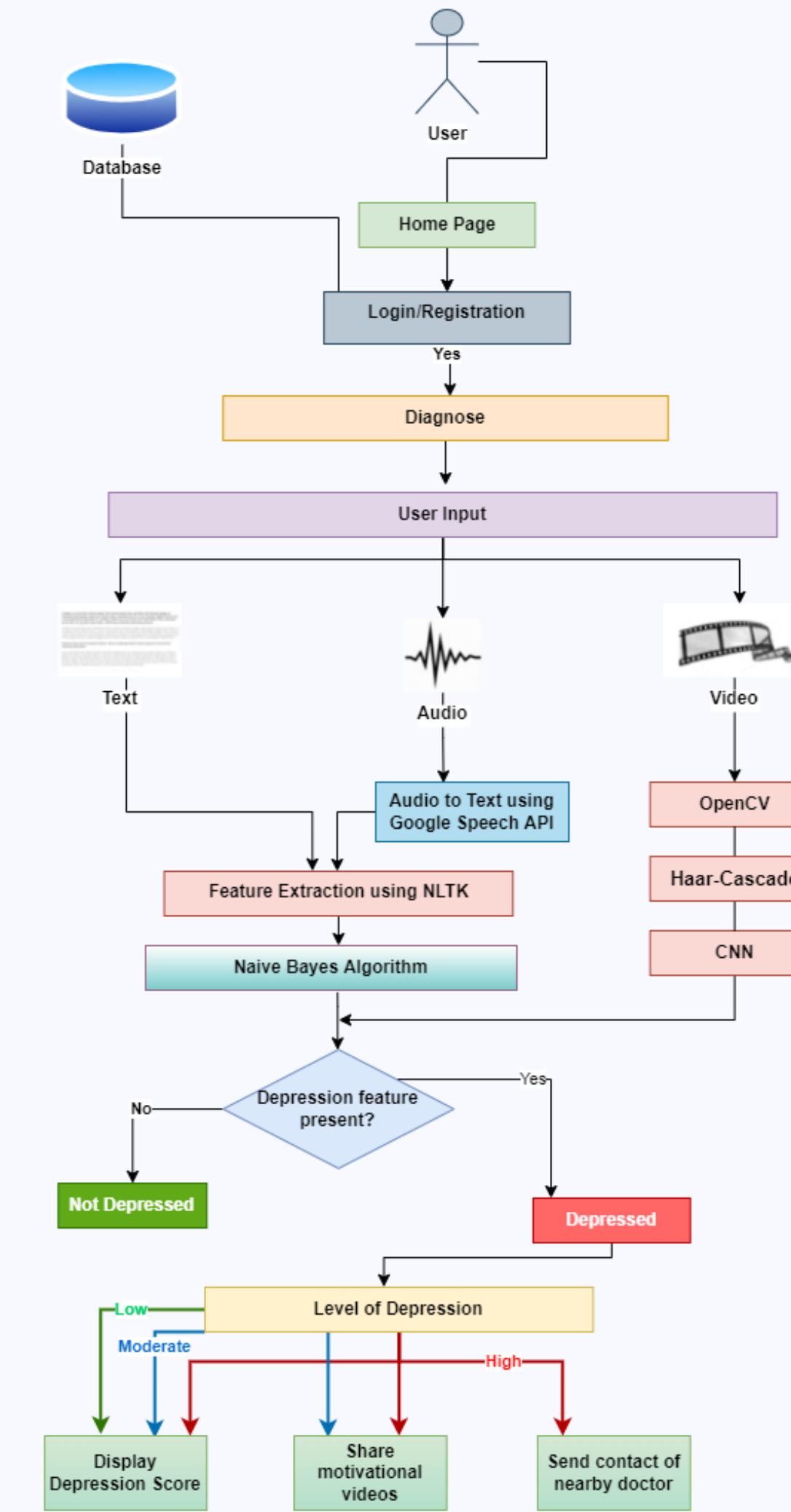
Analyse & cure with the help of Technology

- Intelligent System
- Innovation: replace traditional & existing system of depression detection
- Environment Friendly
- Personalised health assistance
- Resolve your queries with our human-friendly chatbot, "DIVEBOT"



**WHY
DIP-DIVE?**

SYSTEM ARCHITECTURE





IMPLEMENTATION TECHNIQUES

NAIVE BAYES

Naïve Bayes algorithm is a supervised machine learning algorithm, based on Bayes theorem and used for solving classification problems.

HAAR-CASCADE

A Haar classifier, or a Haar cascade classifier, is a machine learning object detection program that identifies objects in an image and video.

CNN

Convolutional Neural Network or CNN is a type of artificial neural network, which is widely used for image/object recognition and classification.

NATURAL LANGUAGE PROCESSING

Natural language processing helps computers communicate with humans in their own language and scales other language-related tasks. It is a subfield of AI.



IMPLEMENTATION TECHNIQUES

OPENCV

OpenCV is a tool for image processing and performing computer vision tasks. It can be used to perform tasks like face detection, objection tracking,etc.

GOOGLE SPEECH TO TEXT API

It is an API developed by Google, can help you type any documents, books, reports, blog posts with your voice

PYTORCH

PyTorch is an open source deep learning framework that makes it easy to develop machine learning models

SQLALCHEMY

SQLAlchemy is the Python SQL toolkit and Object Relational Mapper that gives application developers the full power and flexibility of SQL.

MODULES

- Homepage
- Login
- Registration
- Reset Password
- Questionnaire
- User Profile
- Edit Profile
- Textual Analysis
- Audio Analysis
- Visual Analysis
- Aggregate Score
- Auto-SMS
- User History
- Chatbot



- 01 We have introduced & implemented an AI system, for depression detection using Audio, Video & Text features
- 02 The developed system was tested under various inputs and all the test cases were passed successfully.
- 03 The system was implemented using the technique of 'Sentiment analysis for depression detection'.
- 04 Dip-dive will surely prove a squirrel share in improving mental health of individuals.

CONCLUSION

OUR TEAM



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- <https://www.tutorialspoint.com>
- <https://www.javatpoint.com>
- <https://www.geeksforgeeks.com>
- The Mindful Way - to free yourselves from depression
- A Practical Guide to Sentiment Analysis
- <https://www.canva.com>