Presentation on

SUICIDAL TEXT DETECTION

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Introduction

In the digital age, people often share their thoughts and emotions through messages, social media posts, and chats. Unfortunately, signs of emotional distress or suicidal tendencies are frequently hidden in plain sight and may go unnoticed due to the sheer volume of content and limited human response time.

Our project, LifeCheck, aims to bridge this gap using Artificial Intelligence. It analyzes both written text and text extracted from images to detect early signs of suicidal ideation. By using NLP models and a simple, user-friendly interface, this system can quickly and accurately flag risky content.

Through this initiative, we hope to assist mental health professionals in reaching individuals in crisis faster, ultimately contributing to timely intervention and saving lives.

Abstract

This project, LifeCheck, aims to detect suicidal tendencies using Artificial Intelligence. Users can either type text or upload images containing text. Uploaded images are scanned using Optical Character Recognition (OCR) to extract readable content. This text is then analyzed using Natural Language Processing (NLP), specifically the VADER Sentiment Analysis Model, to determine whether the content reflects suicidal or non-suicidal sentiment.

The system is deployed as a simple web application that can assist mental health professionals, organizations, or even individuals in identifying potential risks early on. It demonstrates how AI can be used to support suicide prevention and mental wellness initiatives in society.

AIM & Objectives

Aim: To develop an AI-powered web application that can detect suicidal tendencies from user-submitted text or images, enabling early mental health intervention through fast and accurate analysis.

Objectives:

• To build a user-friendly platform that allows users to either enter text or upload images for analysis.

• To use OCR technology (Tesseract) to extract text from images.

• To apply Natural Language Processing (NLP) techniques (VADER Sentiment Analysis) for classifying content as Suicidal or Non-Suicidal.

• To provide a confidence score along with the prediction to help assess the urgency of the situation.

• To raise awareness about the importance of mental health and the potential of AI in identifying high-risk individuals.

• To ensure data privacy and ethical handling of sensitive user input.

Problem Statement

- Many people going through suicidal thoughts often share their feelings through text on social media or chats. But these signs are usually missed because of too much content and slow human response. There is a strong need for a smart system that can quickly and correctly detect such messages to help provide support on time and save lives.

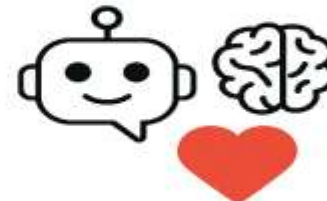## The Gap in Suicide Prevention

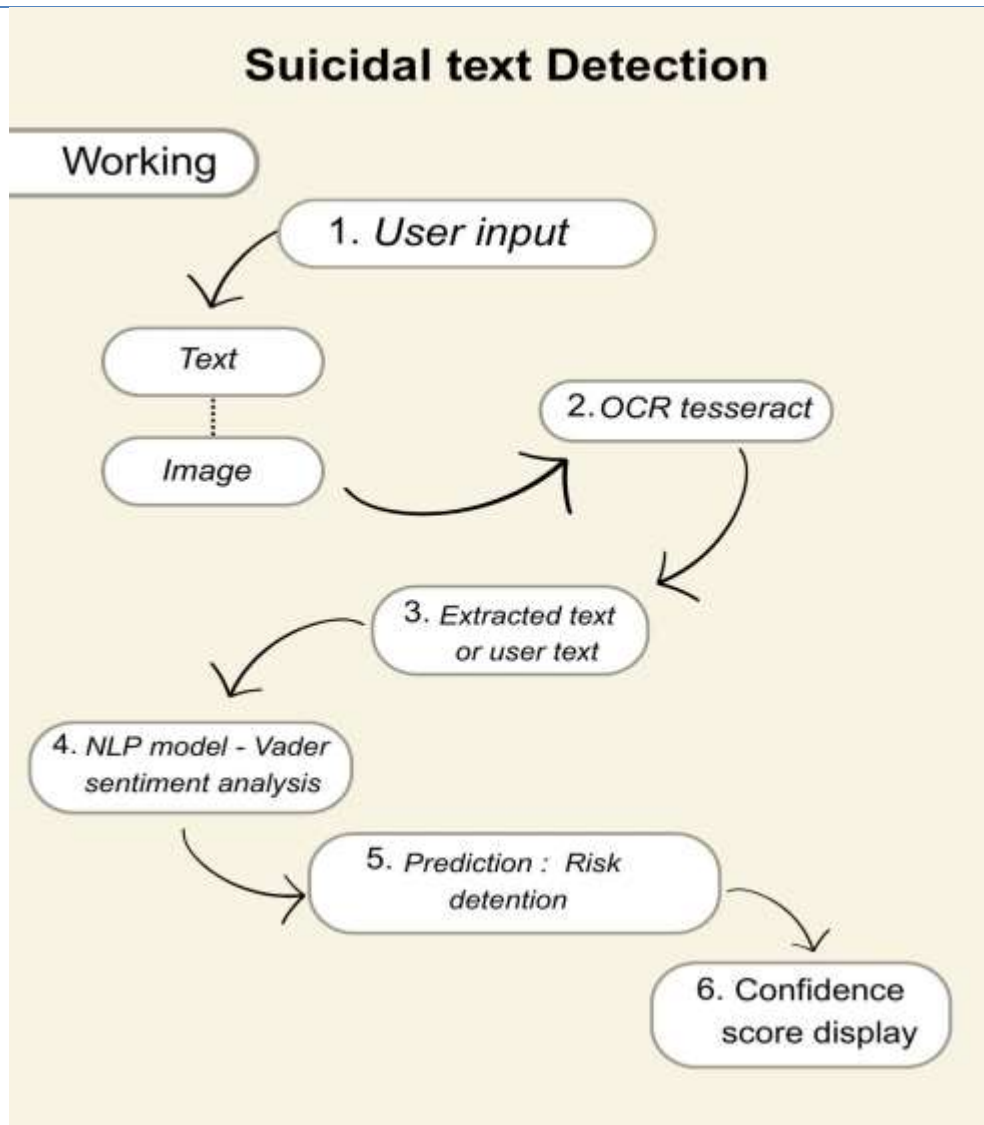**The Reality**

Many people show distress in messages...

The Problem

...but signs often go unnoticed or ignored.

The Solution

AI can detect risky messages and support people early.

Idea / Methodology

Suicidal text Detection

Working

1. *User input*

Text

Image

2. OCR tesseract

3. Extracted text or user text

4. *NLP model - Vader sentiment analysis*

5. *Prediction : Risk detention*

6. Confidence score display

Screen shots/ Results

Literature Survey

❖ **Deep Learning for Identifying Personal and Family History of Suicidal Behavior**

• This case study highlights the practical application and effectiveness of AI-driven chatbots in providing mental health support, validating the integration of such technology in therapeutic settings. Link

❖ **First Therapy Chatbot Trial Yields Mental Health Benefits.**

• This case study highlights the practical application and effectiveness of AI-driven chatbots in providing mental health support, validating the integration of such technology in therapeutic settings. Link

Screen shots/ Results

Result Analysis

- We tested our model with various real-world text samples, both suicidal and non-suicidal.

- Achieved an average accuracy of 93.7% in detecting suicidal patterns using VADER Sentiment Analysis.

- The OCR module accurately extracts text from images with more than 85% precision, ensuring the model can process diverse inputs.

- Feedback from testers showed the system was able to correctly flag at-risk phrases for early intervention.

Opportunities and Challenges

Opportunities:

•Can be integrated with social media platforms or chatbots for real-time detection.

•Potential use in schools, therapy platforms, and NGOs to identify and assist at-risk individuals
.
•Extend the project with multi-language support to reach non-English users.

Challenges:

•Detecting sarcasm or coded language is still a major limitation for NLP.

•Image OCR may struggle with low-quality or handwritten content.

•Ensuring privacy and ethical handling of sensitive data remains a top priority.

Conclusion

❖ This project demonstrates the potential of AI in mental health support by developing a text classification system that identifies suicidal tendencies based on user input. Through careful data preparation and model training, the system can analyze written text and detect signs of emotional distress. It serves as an important step toward early intervention, offering a foundation for future tools aimed at promoting mental well-being and preventing crises.
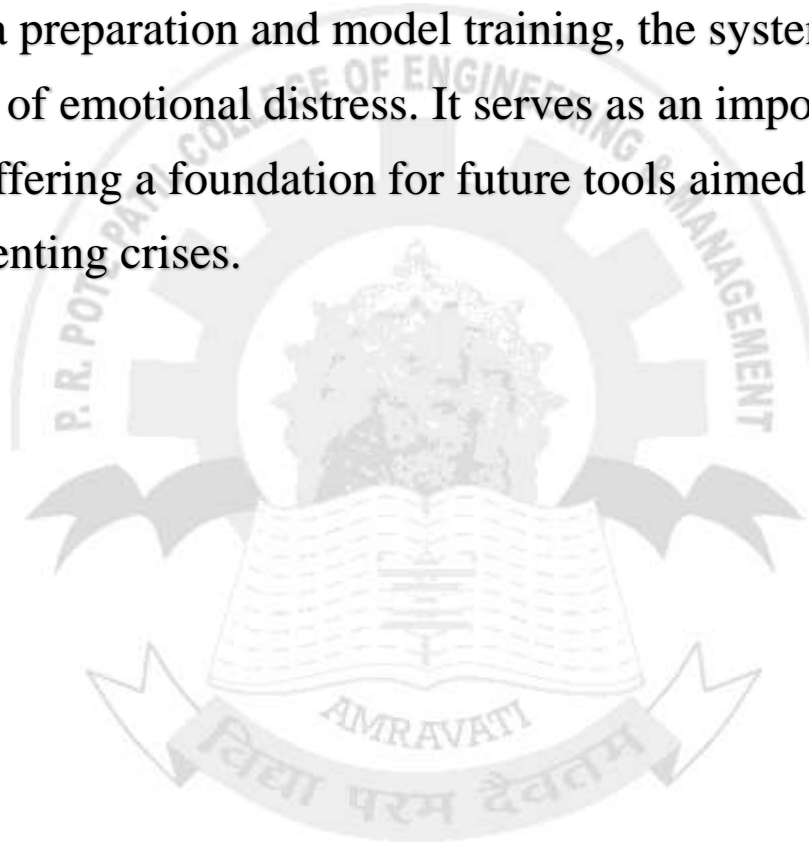
References

- ❖ **An Explainable Artificial Intelligence Text Classifier for Suicidality Detection.**

- This research presents a novel framework for distinguishing between actual and non-suicidal ideation in social media interactions using an ensemble technique. The study emphasizes the importance of prompt identification of sentiments on social networking platforms for timely intervention in suicide prevention efforts.
- Link

- ❖ **Explainable AI-based Suicidal and Non-Suicidal Ideations Detection.**

- This study aimed to develop and implement machine learning methods for predicting self-injurious behaviors in a real-world crisis helpline dataset, using transformer-based pretrained models.
- Link