EMO GUIDE

A Mini-Project Report Submitted in the Partial Fulfillment of the Requirements for the Award of the Degree of

BACHELOR OF TECHNOLOGY

IN

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Submitted by

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(AUTONOMOUS)
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CERTIFICATE

This is to certify that the project titled **Emo guide** is carried out by

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in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Artifical Intelligence and Machine Learning** during the year 2024-25.

Signature of the Supervisor	**Signature of the HOD**
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Project Viva-Voce held on ________________________

Examiner

Acknowledgement

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Abstract

The increasing demands of modern life have led to heightened stress levels, necessitating the development of tools that not only assist with task management but also support emotional well-being. This proposal outlines the creation of an Emo guide designed to bridge this gap. The Emo guide essential function is to incorporate advanced emotional intelligence to detect signs of emotional distress in users. Upon identifying stress or frustration, the Emo guide will provide tailored stress-relief content, such as calming music, entertaining videos, games or soothing images from the user's personal gallery. This personalized approach aims to enhance user well-being, making the Emo guide a comprehensive tool for managing both daily tasks and emotional health.

Keywords : emotion; suggestion; expression; natural language processing;

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Abbreviations

Abbreviation	**Description**
VA	Virtual Assistant
DL	Deep Learning
AI	artificial intelligence
NLP	Natural Language Processing
IoT	Internet Of Things
API	Application Programming interface
CNN	Convolutional Neural Network

CHAPTER 1

Introduction

In an era where the pace of life is accelerating and the demands on individuals are constantly increasing, managing daily tasks and maintaining emotional well-being have become critical challenges. Traditional virtual assistants have proven invaluable in helping users stay organized and efficient by managing schedules, setting reminders, and answering queries. However, these assistants often fall short in addressing the emotional and mental health needs of users. This gap underscores the need for an Emo guide.

The Emo guide is envisioned as an advanced tool that not only performs standard personal assistant functions but also integrates emotional intelligence to detect and respond to signs of emotional distress. By Utilizing sentimental analysis technology, the Emo guide can identify when a user is experiencing stress or frustration through inputs such as facial expressions. Upon detecting such states, the Emo guide offers tailored stress-relief content designed to soothe and comfort the user. This content includes calming music, entertaining videos, and comforting images curated from the user's personal gallery, providing a personalized touch to the stress-relief process.[1] A key feature of the Emo guide is its emphasis on user autonomy. Allowing them to halt or modify the provided stress-relief interventions as needed. This ensures that the Emo guide remains a supportive tool, respecting the user's preferences and needs.

By combining traditional task management capabilities with sophisticated emotional intelligence and personalized stress-relief features, the Emo guide represents a significant advancement in virtual assistant technology. It aims to not only enhance productivity but also support emotional well-being, making it an indispensable companion in navigating the complexities of modern life.[2]

CHAPTER 2

Literature Survey

Virtual assistants, also known as intelligent personal assistants, are software agents that can perform tasks or services based on commands or questions. These assistants leverage technologies such as natural language processing (NLP), machine learning, and artificial intelligence (AI) to understand and respond to user inputs in a conversational manner. They are designed to assist users with various tasks, such as setting reminders, answering questions, controlling smart home devices, and providing recommendations. The development and deployment of virtual assistants have grown rapidly, with prominent examples including Apple's Siri, Amazon's Alexa, Google Assistant, and Microsoft's Cortana. These systems are increasingly integrated into smartphones, smart speakers, and other IoT devices, making them more accessible and versatile.[3]

The evolution of virtual assistants has been driven by advances in AI and machine learning algorithms, which have improved their ability to understand context, handle complex queries, and learn from interactions. Research in this field focuses on enhancing the accuracy and efficiency of these assistants, addressing challenges such as language ambiguity, user privacy, and ethical considerations. Studies have shown that user satisfaction with virtual assistants depends on their ability to provide accurate and relevant responses, maintain natural and engaging conversations, and ensure data security. As the technology continues to evolve, future developments may include more sophisticated emotional intelligence, deeper personalization, and expanded integration across various platforms and industries.

CHAPTER 3

Existing system and its disadvantages

Virtual assistants have become an integral part of modern technology, offering convenience and efficiency through hands-free operation. Popular examples include Amazon's Alexa, Apple's Siri, Google Assistant, and Microsoft's Cortana. These assistants can perform various tasks, such as setting reminders, providing weather updates, controlling smart home devices, and answering queries. However, despite their many advantages, virtual assistants also come with a range of disadvantages.[4]

1. Lack of Emotional Intelligence: Impersonal Interactions: Despite advancements, virtual assistants often lack true emotional intelligence, leading to interactions that can feel impersonal and unresponsive to users' emotional states.

2. Stress Detection Limitations: While some assistants are beginning to incorporate sentiment analysis, their ability to accurately detect and respond to user stress or emotional distress is still limited.

3. Inaccurate or Incomplete Information: Contextual Understanding: Virtual assistants sometimes struggle with understanding the context of a query, resulting in irrelevant or incorrect responses.

4. Interference with Human Interaction: Reduced Face-to-Face Communication: Increased use of virtual assistants for daily tasks can lead to a decline in face-to-face communication and interpersonal skills, as users may prefer interacting with the assistant over human interaction.

5. Social Isolation: Over-dependence on virtual assistants can contribute to social isolation, especially for individuals who might already have limited social interactions.

CHAPTER 4

Proposed system and its advantages

4.1 Proposed system:

The Emo guide can detect emotional distress, providing timely and tailored interventions to help users manage stress and maintain emotional well-being. This support is particularly valuable in reducing the negative impacts of stress on mental health. Detects emotional distress and provides tailored stress-relief content.Curates calming content like music, videos, and pictures from personal gallery.Prioritizes user autonomy with button based control for halting suggestions.The Emo guide can adapt to the user's changing emotional states and preferences over time, continually improving its ability to provide effective support and relevant content.Integrate stress-relief features such as playing calming music, displaying funny videos/memes, or suggesting calls with friends or relatives to help calm the user. The Emo guide can be designed with robust privacy and security measures to protect user data, particularly the sensitive information related to their emotional state and personal content. This ensures that users can trust the Emo guide with their private information.

4.2 Advantages of the Emo guide:

1. **Enhanced Emotional Support:** The Emo guide can detect emotional distress, providing timely and tailored interventions to help users manage stress and maintain emotional well-being. This support is particularly valuable in reducing the negative impacts of stress on mental health.

2. **Personalized Stress Relief:** By curating calming content such as music, videos, and pictures from the user's personal gallery, the Emo guide offers a personalized approach to stress relief. This customization ensures that the content resonates more deeply with the user, enhancing its effectiveness.

3. Improved Productivity: By addressing emotional distress and providing stress-relief interventions, the Emo guide helps users stay focused and productive. Managing stress effectively can lead to better performance in both personal and professional tasks.

4. Privacy and Security: The Emo guide can be designed with robust privacy and security measures to protect user data, particularly the sensitive information related to their emotional state and personal content. This ensures that users can trust the Emo guide with their private information.

5. User Autonomy: The virtual-assistant control feature allows users to halt suggestions or interventions, ensuring that they have full control over the Emo guide actions. This autonomy enhances user comfort and trust in the system.

6. Holistic User Experience: By combining practical assistance with emotional support, the Emo guide offers a holistic user experience that addresses both the functional and emotional aspects of daily life, creating a more balanced and satisfying interaction.

7. Adaptability: The Emo guide can adapt to the user's changing emotional states and preferences over time, continually improving its ability to provide effective support and relevant content.

8. Proactive Well-being Management: The Emo guide ability to detect stress and provide immediate relief measures promotes proactive management of mental health. This can prevent the escalation of stress-related issues, contributing to long-term well-being.

CHAPTER 5

System requirements

5.1 Software requirements

1. Python programming language
2. machine learning libraries for emotion detection
3. Web search API integration for answering questions
4. Media player integration for playing music
5. operating system like Windows Server, Linux
6. NLP libraries like TensorFlow.

5.2 Hard requirements

1. Cameras or webcam for capturing clear facial images for accurate emotion detection.

2. Compatible devices for running the Emo guide application (e.g., smartphones, tablets, computers)

3. A powerful CPU

4. A minimum of 16GB of RAM is recommended to handle the demands of running the Emo guide software

5. An SSD is crucial for fast loading times of the Emo guide software and efficient processing of image data.

6. A reliable and high-speed internet connection is essential.

CHAPTER 6

System design

6.1 Architecture Diagram

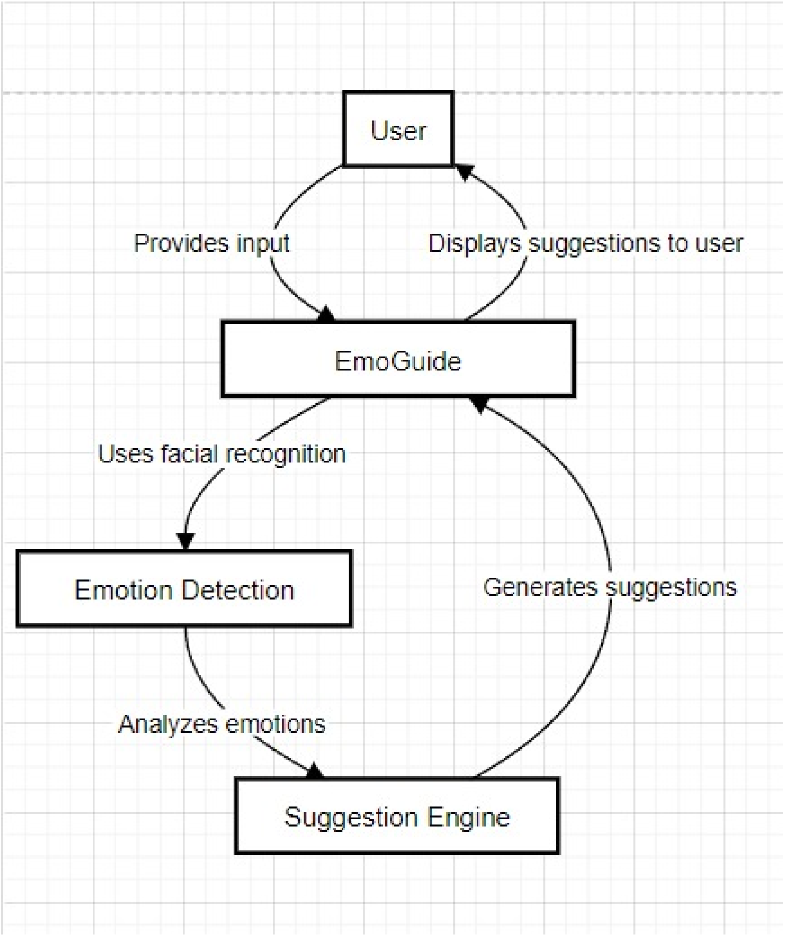


Figure 6.1: Diagram of Emo guide

6.2 Working model

Emo guide main task is to detect emotions of user using facial recognition and to provide suggestions to maintain their calm and mental health. So, The one and only aim of Emo guide is to maintain the calm of the person , if she/he is stressed, angry or frustrated

1. user Provides Input : The user interacts with the system through a facial recognition camera .

2. Facial Recognition: The system uses facial recognition technology to analyze the user's face. This might involve extracting features from the user's facial image, such as the distance between their eyes or the shape of their jawline.

3. Emotion Detection : Based on the facial features extracted in the previous step, the system attempts to detect the user's emotions. This is done using machine learning algorithms trained on labeled datasets of facial expressions.

4. Suggestion Engine : The system uses the detected emotion to generate suggestions for the user. The nature of these suggestions would depend on the emotion of the person. For example, if the emotion detected is angry then it will suggest to Practice deep breathing to help users improve their emotional well-being, it might suggest relaxation techniques for users who appear stressed.

5. Displays Suggestions to User : The system displays the generated suggestions to the user in a user-friendly format.

Overall, the working model leverages facial recognition technology to infer the user's emotional state and provide them with relevant suggestions.

6.3 Algorithms used

1. model = Sequential(): This line creates a sequential model, which is a way to stack layers together in a linear fashion. This is a common way to define CNN architectures in Keras.

2. Conv2D: This line defines a convolutional layer with 32 filters, a kernel size of 3x3, and a relu activation function. The input shape specifies that the input to the model is a 28x28 grayscale image (one channel). Convolutional layers are the building blocks of CNNs and are used to extract features from images. The filter learns to detect specific patterns in the input image, and the relu activation function introduces non-linearity into the network, allowing it to learn more complex features.

3. MaxPooling2D: This line defines a pooling layer with a pool size of 2x2. Pooling layers are used to reduce the dimensionality of the data and make the model more robust to variations in the input image. In this case, it will reduce the size of the feature maps by half in each dimension.

4. Flatten(): This line flattens the output of the convolutional layers into a single dimension. This is necessary before feeding the data into the fully-connected layers of the network, which are typically used for classification tasks.

5. Dense: This line defines a fully-connected layer with 128 units and a relu activation function. Fully-connected layers are like regular artificial neural network layers, where each neuron is connected to all the neurons in the previous layer. They are used to learn more complex relationships between the features extracted by the convolutional layers and the output labels.

6. Dense: This line defines another fully-connected layer with 10 units and a softmax activation function. The number of units (10) typically corresponds to the number of classes the model is trying to classify (e.g., 10 different digits in a handwritten digit classification task). The softmax activation function outputs a probability distribution over the class labels, so the sum of the outputs will be 1 and each output represents the probability of the input belonging to a particular class.

CHAPTER 7

Implementation

7.1 Module description

cv2: OpenCV (cv2) is a popular library used for real-time computer vision.[5]

Keras: Keras is a high-level neural network API built on top of TensorFlow. It provides a convenient way to rapidly prototype deep learning models.[6]

TensorFlow: TensorFlow is an open-source software library for numerical computation using data flow graphs. While Keras is a user-friendly layer on top of TensorFlow, TensorFlow allows for more direct manipulation of the computational backend.[7]

ImageDataGenerator: This class is part of Keras and is used for data augmentation. It can be used to generate new images from existing images by applying random transformations such as rotations, flips, and brightness adjustments. This helps to improve the robustness of models and prevent overfitting. [8] [9]

Here's a brief description of what each module does in the model (code) :

1. cv2: used for image pre-processing steps .

2. Keras: Used to define the architecture of a convolutional neural network (CNN) model. The model has layers including Conv2D for convolutional operations, MaxPooling2D for downsampling the data, Dense for fully-connected layers, Dropout for regularization to prevent overfitting, and Flatten to reshape the data for feeding it into the Dense layers.

3. TensorFlow: Provides the computational backend for the Keras model.

4. ImageDataGenerator: it is imported for use in data augmentation.

tkinter: This is Python's built-in library for creating graphical user interfaces (GUIs). In the code snippet, tkinter is imported with the from... import... statement, which allows the programmer to use functions and classes from the library without having to prefix them with tkinter. For instance, the messagebox function, used to display pop-up messages, can be called directly without having to write tkinter.messagebox.

ttk: This module is an extension of tkinter that provides widgets with a more modern look and feel. In the code snippet, ttk is imported along with tkinter using the same from... import... statement.

PIL (Python Imaging Library): This is an external library used for image processing in Python. The code snippet imports Image and ImageTk from PIL. Image is used to load and manipulate images, and ImageTk is used to display images in Tkinter applications.

Sequential container in Deep Learning libraries: In deep learning libraries like PyTorch and Keras, the Sequential module is a container used to define a neural network architecture with layers stacked sequentially.

You add layers (like convolutional, pooling, dense layers) to the Sequential container in the order you want them to be applied to the data.

The Sequential module efficiently handles the data flow through these layers during the model's forward pass. It simplifies the code compared to manually defining the data flow between each layer.

7.2 Technologies used

Computer Vision (CV): This field of AI deals with extracting information from digital images and videos. In this case, CV algorithms would be used to analyze the user's facial features like eye position, lip corners, and wrinkle patterns.

Deep Learning (DL): This is a subfield of machine learning inspired by the structure and function of the human brain. DL models, particularly Convolutional Neural Networks (CNNs), are very effective at image recognition and classification tasks. The app might use pre-trained CNN models for facial landmark detection or train its own model on a dataset of labeled facial images.

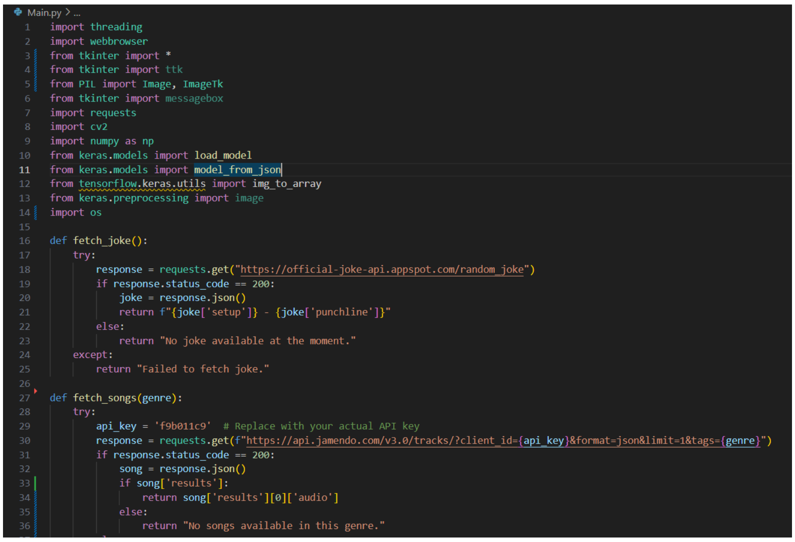
Facial Recognition: This technology uses facial features to verify a person's identity or to identify unknown individuals in images or videos. In this app, facial recognition would likely be used to identify a specific user and potentially track their emotional state over time.

Emotion Detection: This technology attempts to infer a person's emotions from their facial expressions, tone of voice, and body language. The app might use pre-trained emotion detection models or train its own model on a dataset of labeled facial expressions corresponding to specific emotions.

Suggestion Engine: This is a software component that recommends products, services, or actions based on user data. In this case, the suggestion engine would use the user's inferred emotional state (and potentially other factors) to generate suggestions tailored to their needs. This could involve accessing databases of recommendations or using machine learning models to personalize suggestions.

7.3 Sample code

https://github.com/Akhil-811/emotion-project.git

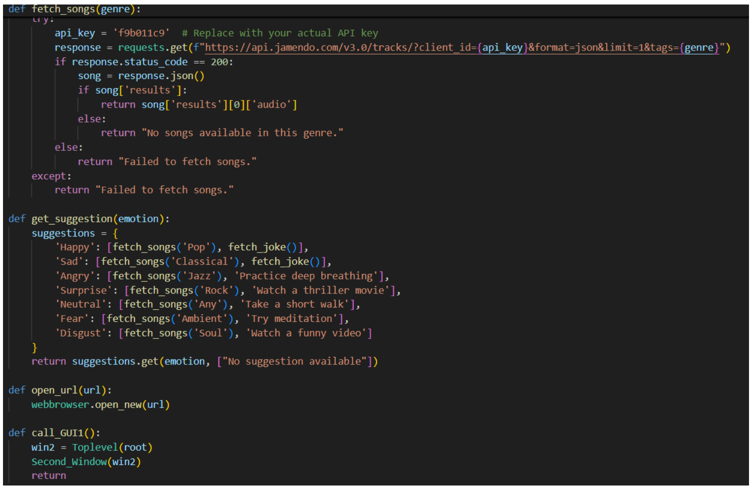


```python
import threading
import webbrowser
from tkinter import *
from tkinter import ttk
from PIL import Image, ImageTk
from tkinter import messagebox
import requests
import cv2
import numpy as np
from keras.models import load_model
from keras.models import model_from_json
from tensorflow.keras.utils import img_to_array
from keras.preprocessing import image
import os

def fetch_joke():
    try:
        response = requests.get("https://official-joke-api.appspot.com/random_joke")
        if response.status_code == 200:
            joke = response.json()
            return f"{joke['setup']} - {joke['punchline']}"
        else:
            return "No joke available at the moment."
    except:
        return "Failed to fetch joke."

def fetch_songs(genre):
    try:
        api_key = 'f9b011c9'  # Replace with your actual API key
        response = requests.get(f"https://api.jamendo.com/v3.0/tracks/?client_id={api_key}&format=json&limit=1&tags={genre}")
        if response.status_code == 200:
            song = response.json()
            if song['results']:
                return song['results'][0]['audio']
            else:
                return "No songs available in this genre."
```

Figure 7.1: Loading library files



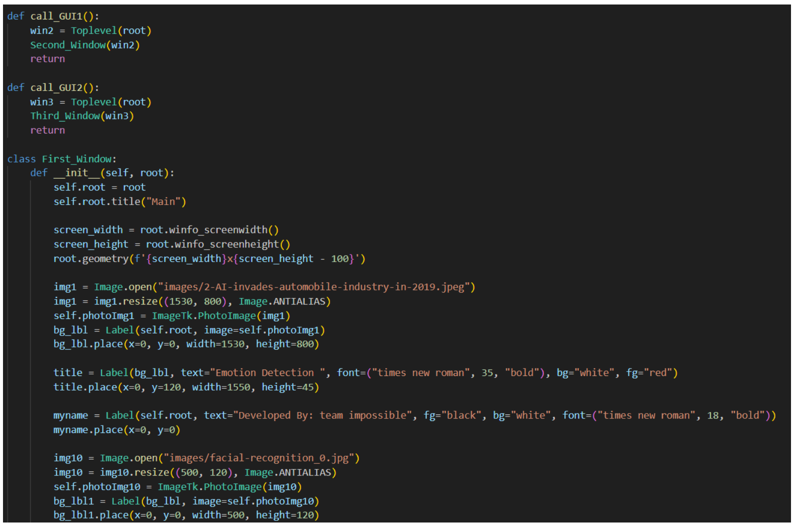
```python
def fetch_songs(genre):
    try:
        api_key = 'f9b011c9'  # Replace with your actual API key
        response = requests.get(f"https://api.jamendo.com/v3.0/tracks/?client_id={api_key}&format=json&limit=1&tags={genre}")
        if response.status_code == 200:
            song = response.json()
            if song['results']:
                return song['results'][0]['audio']
            else:
                return "No songs available in this genre."
        else:
            return "Failed to fetch songs."
    except:
        return "Failed to fetch songs."

def get_suggestion(emotion):
    suggestions = {
        'Happy': [fetch_songs('Pop'), fetch_joke()],
        'Sad': [fetch_songs('Classical'), fetch_joke()],
        'Angry': [fetch_songs('Jazz'), 'Practice deep breathing'],
        'Surprise': [fetch_songs('Rock'), 'Watch a thriller movie'],
        'Neutral': [fetch_songs('Any'), 'Take a short walk'],
        'Fear': [fetch_songs('Ambient'), 'Try meditation'],
        'Disgust': [fetch_songs('Soul'), 'Watch a funny video']
    }
    return suggestions.get(emotion, ["No suggestion available"])

def open_url(url):
    webbrowser.open_new(url)

def call_GUI1():
    win2 = Toplevel(root)
    Second_Window(win2)
    return
```

Figure 7.2: Suggestions implementation



```python
def call_GUI1():
    win2 = Toplevel(root)
    Second_Window(win2)
    return

def call_GUI2():
    win3 = Toplevel(root)
    Third_Window(win3)
    return

class First_Window:
    def __init__(self, root):
        self.root = root
        self.root.title("Main")

        screen_width = root.winfo_screenwidth()
        screen_height = root.winfo_screenheight()
        root.geometry(f'{screen_width}x{screen_height - 100}')

        img1 = Image.open("images/2-AI-invades-automobile-industry-in-2019.jpeg")
        img1 = img1.resize((1530, 800), Image.ANTIALIAS)
        self.photoImg1 = ImageTk.PhotoImage(img1)
        bg_lbl = Label(self.root, image=self.photoImg1)
        bg_lbl.place(x=0, y=0, width=1530, height=800)

        title = Label(bg_lbl, text="Emotion Detection ", font=("times new roman", 35, "bold"), bg="white", fg="red")
        title.place(x=0, y=120, width=1550, height=45)

        myname = Label(self.root, text="Developed By: team impossible", fg="black", bg="white", font=("times new roman", 18, "bold"))
        myname.place(x=0, y=0)

        img10 = Image.open("images/facial-recognition_0.jpg")
        img10 = img10.resize((500, 120), Image.ANTIALIAS)
        self.photoImg10 = ImageTk.PhotoImage(img10)
        bg_lbl1 = Label(bg_lbl, image=self.photoImg10)
        bg_lbl1.place(x=0, y=0, width=500, height=120)
```

Figure 7.3: GUI implementation

CHAPTER 8

Testing

The testing phase of the Emotionally Intelligent Virtual Personal Assistant Emo guide project is crucial to ensure the system's functionality, accuracy, and reliability. The testing process involves several stages to validate the various components and features of the Emo guide.

Emotion Detection Testing The emotion detection module is tested using a dataset of facial images with known emotional expressions.
-The model's accuracy in correctly identifying the emotions is evaluated, and the performance is compared against industry benchmarks.
- Edge cases, such as partial facial occlusions or unusual expressions, are also tested to ensure robust emotion detection.

Stress/Frustration Detection Testing - The system's ability to accurately detect signs of stress or frustration in the user's facial expressions and tone of virtual is thoroughly tested.
- A combination of simulated scenarios and real-user interactions are used to validate the stress/frustration detection capabilities.
- The system's responsiveness in providing appropriate stress-relief suggestions is also evaluated.

Personalized Suggestion Testing - The Emo guide ability to provide personalized suggestions based on the user's emotional state and preferences is tested.
- A diverse set of user profiles and scenarios are used to ensure the suggestions are relevant, effective, and tailored to the individual's needs.
- User feedback is collected to assess the perceived usefulness and relevance of the provided suggestions.

Usability and User Experience Testing - The Emo guide user interface and overall user experience are evaluated through usability testing sessions.
- Users are asked to perform various tasks, and their feedback on the system's intuitiveness, responsiveness, and ease of use is collected.
- Accessibility features, such as support for different languages and accessibility options, are also tested to ensure inclusive user experiences.

Integration and System-level Testing - The Emo guide integration with various external components, such as media players, web search APIs, and smart home devices, is thoroughly tested.
- End-to-end system testing is conducted to ensure seamless functionality and data flow across all the Emo guide modules.
- Stress testing is performed to evaluate the system's performance and stability under high-load conditions.

Security and Privacy Testing - The Emo guide security measures, such as data encryption, user authentication, and access control, are tested to ensure the protection of user information.
- Privacy-related features, such as the secure diary integration and user consent management, are validated to comply with relevant data protection regulations.

The testing process is an ongoing effort, with regular reviews and updates to the test plans and scenarios to address evolving user requirements and technological advancements. The Emo guide project team collaborates closely with end-users, subject matter experts, and quality assurance professionals to ensure a comprehensive and rigorous testing approach. The successful completion of the testing phase is a critical milestone in delivering a reliable, accurate, and user-centric Emo guide.

CHAPTER 9

Output screenshots

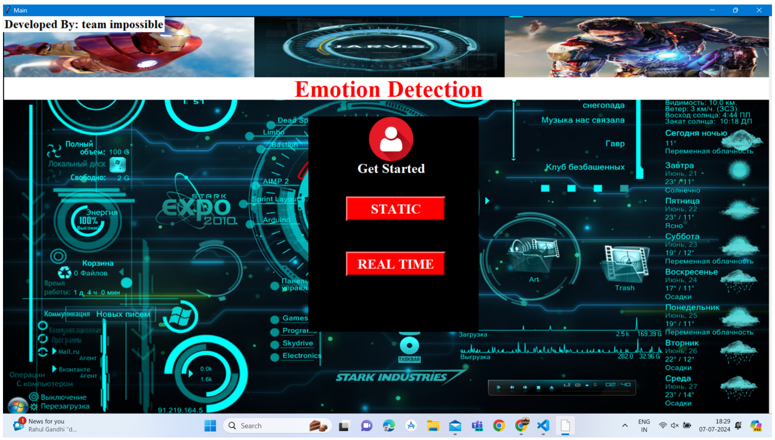
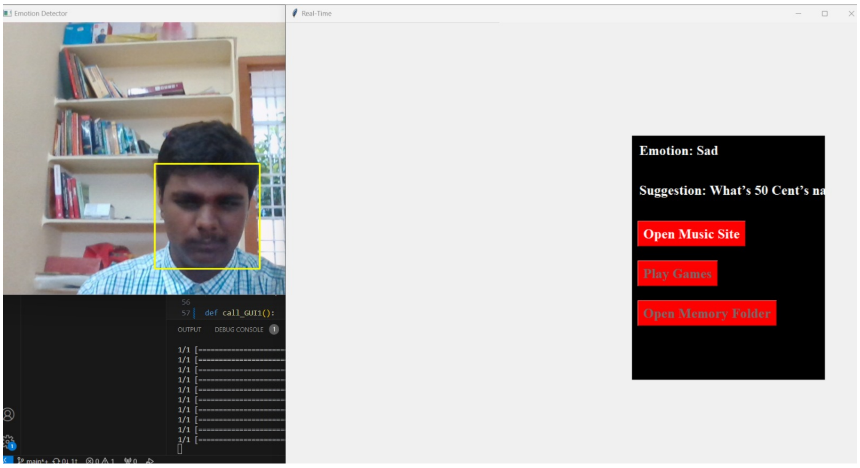


Figure 9.1: Home Screen

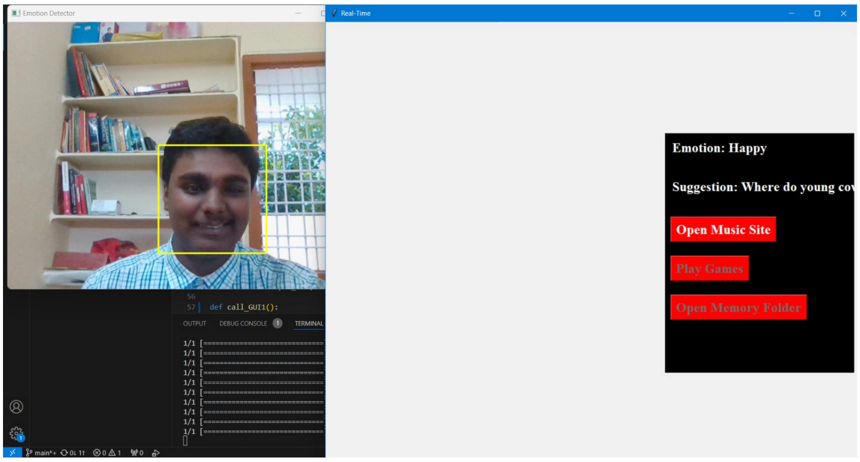


Emotion: Sad

Suggestion: What's 50 Cent's na

```
def call_GUI1():
```

Figure 9.2: sad



```
def call_GUI1():
```

```
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```
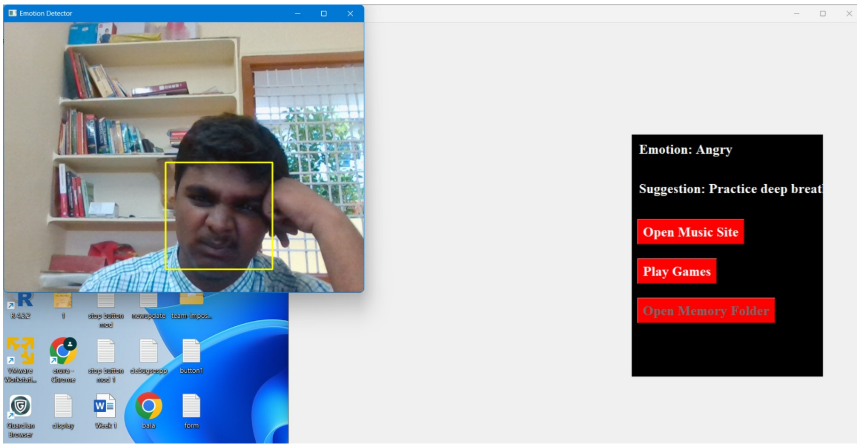

Emotion: Happy

Suggestion: Where do young co

Figure 9.3: Happy



Emotion: Angry

Suggestion: Practice deep breat

Figure 9.4: Angry

CHAPTER 10

conclusion

The current iteration of our Emo guide successfully demonstrates the power of combining emotion detection with personalized suggestions. By utilizing a camera to capture user images, the Emo guide employs machine learning libraries to recognize facial expressions and infer emotional states. Upon analyzing the user's emotional state, the Emo guide delivers personalized suggestions that aim to improve well-being and emotional regulation. This real-time analysis allows the Emo guide to provide users with timely and relevant suggestions tailored to their emotional well-being. The current model showcases the Emo guide potential to promote self-awareness and emotional regulation. Users can gain valuable insights into their nonverbal communication and receive suggestions that can help them manage emotions more effectively. We are encouraged by the positive results achieved with the current working model. It establishes a strong foundation for future advancements as we strive to develop a more comprehensive and intelligent personal assistant.

CHAPTER 11

Future Enhancement

Our Current Emo guide demonstrates promising capabilities in emotion detection and personalized suggestions.However, our vision extends beyond, aiming to transform the Emo guide into a comprehensive and intelligent personal assistant. This section explores some exciting future advancements that will elevate the Emo guide's functionalities and user experience.

11.1 Secure Diary Integration :

a virtual diary where users can confidentially record their thoughts, experiences, and emotions. This diary would cater to various expression styles, allowing users to capture moments through voice notes, text entries. This secure diary fosters emotional well-being by providing a safe space for self-expression and reflection. Users can gain valuable insights into their thought patterns and emotional triggers, ultimately promoting self-awareness and mental clarity.

11.2 Smart Contact Synchronization:

Our Emo guide aspires to become a master of social calendar management. We envision the Emo guide intelligently analyzing user contacts and identifying potential times for meetups based on their free/busy schedules. This eliminates the time-consuming back-and-forth email exchanges for scheduling coffee dates, catching up with friends, or networking events. This feature simplifies social scheduling, freeing up valuable time and reducing the stress associated with coordinating schedules. Users can connect with loved ones and colleagues more efficiently, fostering stronger relationships.

11.3 Automated Task Scheduling:

Our E- Emo guide will learn user routines and preferences. Based on this knowledge, it can suggest and schedule appointments, order groceries when supplies run low, book gym sessions based on activity patterns, or even remind users to take medication. Automated task scheduling streamlines daily life, freeing up mental space and allowing users to focus on higher-priority tasks. This feature empowers users to live a more efficient and fulfilling life, knowing their Emo guide is diligently managing their routine.

The functionalities explored here represent a roadmap for the Emo guide's future development. By continuously innovating and integrating these features, we aim to transform the Emo guide into a comprehensive personal assistant, empowering users to navigate their daily lives with greater ease and efficiency.

REFERENCES

[1] Sumit Sindhu, Sanjeev Kumar, and Amandeep Noliya. "A Review on Sentiment Analysis using Machine Learning". In: *2023 International Conference on Innovative Data Communication Technologies and Application (ICIDCA)*. 2023, pp. 138–142. DOI: `10.1109/ICIDCA56705.2023.10099665`.

[2] Pushpak Bhattacharyya. "Sentiment Analysis". In: *2013 1st International Conference on Emerging Trends and Applications in Computer Science*. 2013, pp. i–i. DOI: `10.1109/ICETACS.2013.6691379`.

[3] Basu Dev Shivahare, Arun Kumar Singh, Nilesh Uppal, Ashar Rizwan, Vangala Sri Vaathsav, and Shashikant Suman. "Survey Paper: Study of Natural Language Processing and its Recent Applications". In: *2022 2nd International Conference on Innovative Sustainable Computational Technologies (CISCT)*. 2022, pp. 1–5. DOI: `10.1109/CISCT55310.2022.10046440`.

[4] Laura Burbach, Patrick Halbach, Nils Plettenberg, Johannes Nakayama, Martina Ziefle, and André Calero Valdez. ""Hey, Siri", "Ok, Google", "Alexa". Acceptance-Relevant Factors of Virtual Voice-Assistants". In: *2019 IEEE International Professional Communication Conference (ProComm)*. 2019, pp. 101–111. DOI: `10.1109/ProComm.2019.00025`.

[5] openCV team. *Home — opencv.org*. `https://opencv.org/`. [Accessed 09-07-2024].

[6] Keras Team. *Keras: Deep Learning for humans — keras.io*. `https://keras.io/`. [Accessed 09-07-2024].

[7] tensorflow team. *TensorFlow — tensorflow.org*. `https://www.tensorflow.org/`. [Accessed 09-07-2024].

[8] Tensor team. *tf.keras.preprocessing.image.ImageDataGenerator — TensorFlow v2.16.1 — tensorflow.org*. `https://www.tensorflow.org/api_docs/python/tf/keras/preprocessing/image/ImageDataGenerator`. [Accessed 09-07-2024].

[9] tensorflow team. *tf.keras.preprocessing.image.ImageDataGenerator — TensorFlow v2.16.1 — tensorflow.org*. `https://www.tensorflow.org/api_docs/python/tf/keras/preprocessing/image/ImageDataGenerator`. [Accessed 09-07-2024].