DECLARATION

We the undersigned students of 6th semester, Department of Artificial Intelligence & Data Science, BMS College of Engineering, declare that the mini project entitled "**Audio Sentiment Detection System"**, is a bonafide work of us and our project is neither a copy nor by any means a modification of any other engineering project.

We also declare that this mini project was not entitled for submission to any other university in the past and shall remain the only submission made and will not be submitted by us to any other university in the future.

Name	USN	Signature
Archita	**1BM22AD010**	**……**
Nisarga M	**1BM23AD402**	**……**

ACKNOWLEDGEMENT

The satisfaction and euphoria that accompany the successful completion of any task would be incomplete without the mention of the people who made it possible, whose constant guidance and encouragement crowned our effort with success.

We are grateful to our institution, **BMS College of Engineering**, with its ideals and inspirations for having provided us with the facilities, which has made this project a success.

We earnestly thank **Dr. Bheemsha, Principal, BMS College of Engineering,** for facilitating academic excellence in the college and providing us with the congenial environment to work in, that helped us in completing this project.

We wish to extend our profound thanks to **Dr. Indiramma M, Prof. and Head, Department of Artificial Intelligence & Data Science, BMSCE,** for giving us the consent to carry out this project.

We would like to express our sincere thanks to our guide **Prof. Shruthi K R, Assistant Professor, Department of Artificial Intelligence & Data Science, BMSCE,** for her able guidance and valuable advice at every stage, which helped us in the successful completion of the project.

We would like to thank all the teaching and non-teaching staff for their valuable advice and support.

We would like to express our sincere thanks to our parents and friends for their support.

Archita

Nisarga M

ABSTRACT

The **Audio Sentiment Detection System** is an intelligent voice-interactive application designed to detect human emotions through spoken input and respond accordingly. In today's world, where human-computer interaction is rapidly evolving, understanding user sentiment is a critical aspect of building responsive and emotionally aware systems. This project leverages speech recognition, natural language processing, and sentiment analysis to bridge the gap between human emotion and machine understanding.

The system functions by first capturing the user's voice through a microphone and converting the audio input into text using Google's Web Speech API, facilitated by the `speech_recognition` library. Once the spoken words are transcribed, the system employs the VADER sentiment analyzer from the `nltk` library to assess the emotional tone of the message. Based on the computed sentiment score, the message is classified into one of five emotional states: happy or excited, calm or content, neutral, sad or disappointed, and angry or frustrated. Each emotional category has a set of predefined, human-like responses that are dynamically selected to match the detected sentiment.

After determining the appropriate response, the system utilizes the `pyttsx3` text-to-speech engine to vocalize the reply, creating a seamless conversational loop. The program continuously listens and reacts to user input until a specific termination command is given, ensuring a persistent and responsive interaction. This combination of real-time speech recognition and emotion-aware feedback demonstrates a basic yet functional model of affective computing.

The Audio Sentiment Detection System serves as an entry point into emotionally intelligent applications. While it currently relies on rule-based logic and lexicon-driven sentiment scores, it lays the groundwork for future enhancements. These may include deep learning models, multimodal emotion recognition (e.g., tone, facial cues), and integration with advanced conversational agents. Ultimately, this project highlights the growing importance of empathy in machine communication and offers a practical approach to embedding emotional awareness in everyday voice-based applications.

CONTENTS

LIST OF FIGURES

LIST OF TABLES