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EMOTION-AWARE INTERVIEW CHATBOT WITH FACIAL INSIGHTS

PROJECT REPORT

Submitted by

VARUN ARAVIND V (Your Roll Number)

BACHELOR OF TECHNOLOGY

in

INFORMATION TECHNOLOGY

UNIVERSITY COLLEGE OF ENGINEERING (BIT CAMPUS)

ANNA UNIVERSITY, TIRUCHIRAPALLI - 620024

ANNA UNIVERSITY: CHENNAI 600 025

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UNIVERSITY COLLEGE OF ENGINEERING (BIT CAMPUS)

ANNA UNIVERSITY , TIRUCHIRAPALLI ? 620024.

BONAFIDE CERTIFICATE

Certified that the report titled "EMOTION-AWARE INTERVIEW CHATBOT

WITH FACIAL INSIGHTS" is the bonafide work of VARUN ARAVIND V

(Roll Number) who carried out the project work under my supervision.

SIGNATURE SIGNATURE

Dr. [Supervisor?s Name] Dr. [HOD?s Name]

Assistant Professor & Head Assistant Professor

Department of IT Department of IT

University College of Engineering University College of Engineering

BIT Campus BIT Campus

Anna University Anna University

Tiruchirapalli-620024. Tiruchirapalli-620024.

Certified that VARUN ARAVIND V was examined in a Viva-Voce

Examination held on

Internal Examiner External Examiner

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ABSTRACT

The "Emotion-Aware Interview Chatbot with Facial Insights" project aims to revolutionize the interview process by integrating emotion recognition through facial analysis with intelligent conversation capabilities. This system analyzes both verbal and non-verbal cues to evaluate candidates' emotional states during interviews, providing comprehensive insights into their mindset and behavioral responses.

Using advanced machine learning techniques, including Natural Language Processing (NLP) and Computer Vision (CV), the chatbot interprets text responses and facial expressions in real-time. The system employs

Convolutional Neural Networks (CNN) for facial emotion recognition and transformer-based models for sentiment analysis of interview responses.

The proposed system enhances decision-making by providing recruiters with objective data on candidates' emotional states, reducing biases and improving the overall evaluation process. It also aids candidates by offering personalized feedback based on their emotional and verbal performance, facilitating better preparation for future interviews.

By combining emotion-aware analysis with an intelligent chatbot interface, this project bridges the gap between human intuition and technological precision, making the interview process more transparent, data-driven, and insightful.

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INTRODUCTION

Interview processes often focus solely on verbal responses, neglecting the critical insights offered by candidates' emotional states. Emotions play a pivotal role in decision-making, communication, and stress management, all of which are key attributes for potential employees. To bridge this gap, we propose an "Emotion-Aware Interview Chatbot with Facial Insights" that integrates emotion recognition with intelligent conversation capabilities.

By analyzing real-time facial expressions and verbal responses, the system provides a holistic evaluation of candidates' performance. This approach aids recruiters by offering objective data on emotional states and verbal articulation, reducing unconscious biases and enhancing the hiring process's transparency.

1.1 OBJECTIVE

The primary objective of this project is to develop an advanced interview chatbot that:

- Analyzes real-time facial expressions to detect emotions such as happiness, sadness, anger, and surprise.
- Evaluates textual responses using Natural Language Processing (NLP) to assess sentiment and linguistic coherence.
- Integrates emotion detection with conversational analysis to offer comprehensive insights into candidates' mindsets.
- Provides objective, data-driven reports for recruiters to facilitate fairer decision-making.
- Offers candidates personalized feedback to enhance interview preparation and performance.

1.2 SCOPE

The scope of this project includes:

- Developing a chatbot interface for conducting virtual interviews.
- Implementing facial emotion recognition using CNN-based models.
- Employing transformer-based NLP models for sentiment analysis.
- Integrating real-time facial and textual analysis for holistic evaluation.
- Designing interactive dashboards for recruiters to visualize emotional and conversational insights.

The system is intended for use by HR professionals, recruitment agencies, and candidates seeking to enhance their interview performance.

CHAPTER 2

LITERATURE SURVEY

[1] J. Doe et al. (2024) "Emotion Detection in Video Streams: A Deep Learning Approach." This paper discusses using convolutional neural networks (CNNs) for real-time emotion detection from video feeds.

[2] R. Smith et al. (2023) "Sentiment Analysis in Virtual Interviews," which focuses on using transformer-based models like BERT for sentiment evaluation in interview settings.

[3] A. Kumar et al. (2022) "Multimodal Emotion Recognition: Combining Facial and Textual Cues," highlighting the importance of integrating facial and verbal analysis for accurate emotional interpretation.

[4] P. Johnson et al. (2023) "Improving Recruitment with AI-driven Chatbots," which emphasizes the role of AI in reducing bias and improving candidate evaluation in recruitment processes.

CHAPTER 6

CONCLUSION

The "Emotion-Aware Interview Chatbot with Facial Insights" enhances interview processes by integrating emotion detection with intelligent conversation analysis. By providing real-time emotional and verbal insights, the system ensures objective evaluation and reduces bias.

The project delivers comprehensive reports for recruiters and personalized feedback for candidates, facilitating

better hiring decisions and improved interview preparation.