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AI-Based Interview Bot

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Abstract - New Era is of Artificial Intelligence where everything is getting automated and analyzed using AI. So Why students pay money for self-interview analysis and performance improvement. This bot will analyze interviews and provide results so students can improve themselves and grab opportunities from companies. It consists of an emotion recognition model, an Automated interview model, a Result generator, etc., which will provide accurate feedback.

***Keywords*:** AI, analysis, emotion recognition, interview, NLP

1. INTRODUCTION

A Job interview is considered as a burden for many people mostly young graduates due to lack of experience and fear of social interaction. Also, lots of people suffer from several mental disorders such as anxiety, panic attacks, etc., due to lack of confidence which affects their job interviews. Consider the following scenario:There are 2 Students Ram and Shyam who are preparing for an interview. Ram is a scholar student of college but lack in confidence whereas Shyam is an average student but have goodinteraction skill. Both had given an interview but Shyam gets hired and Ram doesn't…….. Here the question is why?Here even though Ram is a more skilled person but Shyam has good interactive skills. He gives answers

effectively and energetically with good eye contact. So even though he has fewer marks he gets hired.

In theoretically it is needed that a candidate must be technically sound but in actual practice, a non-verbal behavior is more important.So the interview is based on 3 things: technical knowledge, personality traits, and characteristics and, impression management. In face-to-face interviews, verbal and non-verbal behavior can be easily interpreted. But we are not able to analyze how this behavior affects our interpersonal communication. Many researchers, counselor says that smiling, proper eye contact, comfortable gesture gives a positive impact on interpersonal communication.

By giving mock interviews and analyzing them increase confidence will provide better performance in future.So this platform provides mock interviews for students to prepare for an interview. The system can maintain a question bank for multiple skills also does face emotion recognition and sentimental analysis and can generate follow-up questions based on the answer, verify answers and provide complete reports of the performance of a candidate.

2.Methodology

2.1 Login/Signup Module:

Login/Signup module is basically used for candidate authentication. Here we use the basic form-authentication method.

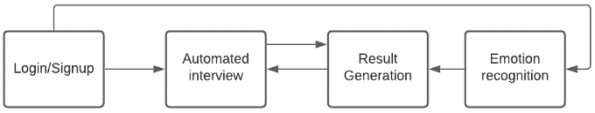

Fig.-1 Block Diagram of interview bot

2.2 Automated Interview :

This module is main part of system consist of 2 parts: Follow-up question generator,Answer verification

2.2.1 Follow-up Question generator:

In this module, based on candidate answer follow-up questions will be generated.For this, We have created a database consist of questions on different technologies and provide an association between technologies and questions for better extraction. Each question has been given a tag. This tag is used to manage interview levels based on candidate performance.

In this module, we have used the keyword extraction method to extract keywords from candidate answers. For keyword extraction, we have used rake (an NLP tool).

2.2.2 Answer verification:

This module is used to verify answers given by candidates.In this NLP tools are used to check the sentence type i.e whether sentence is simple or complex.If a sentence is simple, name entity recognition is done and keywords are extracted from the sentence.But if a sentence is complex, We identify discourse connection between sentences and identify target arguments.After extracting keywords(target arguments), We check the answer using

BERT and tf-idf which provides the probability of answer mapping.This probability is used in the result generation module.

2.3 Result Generation:

This module is used for final report generation.It interacts with the answer verification and emotion recognition module to generate the report.Based on probability from each answer it generates result using :

Result=Round(Result+(Round(probability from answer verification*100))/Number of questions)

And also it keeps track of each question to find the strength and weaknesses of a candidate.It interacts with emotion recognition to find the non-verbal behavior of the candidate.

2.4 Emotion recognition:

This module is used to analyze human emotions to find confidence levels. By mapping confidence level candidate's an assurance on a topic can be calculated to find his strength and weakness. In this module, we use the "fer2013" dataset of emotions. The data in the dataset consist of 48*48 pixel image. Faces are more or less centered and occupy about the same amount of space in each image.

Firstly, the dataset is trained using Keras to distinguish faces into different emotions. In it, there are 28,709 example for training and 3,589 example of testing.Here, We use OpenCV to capture live video and analyze face emotions using the training module. It gives 70% accuracy at the end.

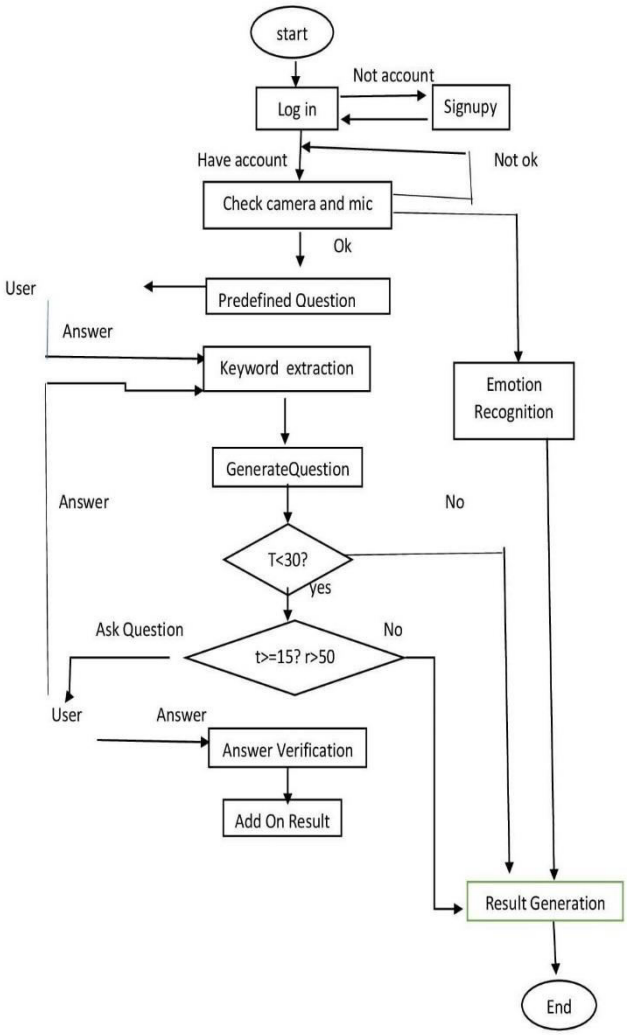

Fig.-2 Interview bot flowchart

3. CONCLUSIONS

We presented an automated interview model which shows the encouraging result for predicting the interview of a candidate. The outcome of a job interview often depends

on a subtle understanding of the interview response.The answer can vary from student to student, So anomaly detection, discourse correction become a tedious task. In the future, we will try to make the system dynamic and also provides feedback option to the candidate.

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We feel thankful to the college staff for giving us such a big opportunity and guiding us. We ensure that this project was done by us and is not copied.

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