

Evalora – Automated AI-Driven Interview Analysis Platform

Mani Kiran A L , Mrs. Roopa R

P.G. Student, Department of Master of Computer Applications, BIET, Davangere-577004.

manikiranal@gmail.com, Davangere, Karnataka, India¹

Assistant Professor of Master of Computer Applications, BIET, Davangere-577004.

roopa.satishlaxmanrao@gmail.com, Davangere, Karnataka, India²

ABSTRACT

Interview evaluation plays a crucial role in academic admissions and recruitment processes. Traditional evaluation methods are subjective, time-consuming, and prone to inconsistency due to human bias and variability in judgment. This paper presents EVALORA, an AI-driven automated interview evaluation platform designed to standardize, accelerate, and enhance the assessment process.

The proposed system processes recorded interview videos by extracting audio, performing noise reduction and normalization, converting speech to text using advanced Automatic Speech Recognition (ASR) models, and analyzing responses using Large Language Models (LLMs). The system automatically identifies question-answer pairs and evaluates responses based on relevance, technical accuracy, fluency, and depth of knowledge.

EVALORA integrates OpenAI Whisper for speech-to-text conversion and GPT-based language models for contextual evaluation. A Flask-based backend and web-based interface ensure usability and scalability. Experimental validation demonstrates reliable performance across functional and non-functional requirements, including usability, performance, reliability, and security.

The system reduces evaluation time, improves consistency, and provides structured qualitative feedback, making it suitable for campus placements, recruitment screening, and academic assessments.

KEYWORDS :

Interview Evaluation, Speech-to-Text, Large Language Models, Automated Assessment, NLP, AI in Recruitment, Whisper, GPT.

INTRODUCTION

Interviews remain one of the most widely used methods for evaluating candidate knowledge, communication skills, and problem-solving abilities in both academic and corporate settings. However, traditional interview evaluation systems suffer from several limitations, including subjectivity, evaluator bias, inconsistency in scoring standards, and excessive time consumption.

With advancements in Artificial Intelligence (AI), particularly in Speech Recognition and Natural Language Processing (NLP), automated systems can now analyze spoken responses with high accuracy. AI-based interview assessment offers opportunities to standardize evaluation metrics while reducing human dependency.

EVALORA is designed as an intelligent evaluation platform that automates post-interview analysis. It integrates state-of-the-art speech-to-text conversion and large language models to deliver structured and unbiased evaluation results. Unlike traditional systems, EVALORA ensures uniform scoring criteria and scalable processing of multiple interview sessions.

The primary objectives of this research are:

1. To automate the interview evaluation process.
2. To minimize human bias and inconsistencies.
3. To generate structured feedback reports.
4. To ensure scalability for large-scale recruitment processes.
5. To maintain fairness using standardized scoring metrics.

I LITERATURE REVIEW

Traditional interview evaluation relies heavily on human observation and manual scoring, which introduces variability in assessment standards. Several research efforts have explored AI-driven assessment techniques.

Automatic Speech Recognition (ASR) systems such as OpenAI Whisper have demonstrated high transcription accuracy across multilingual datasets. Large Language Models (LLMs), derived from transformer architectures, have shown strong capabilities in contextual understanding, semantic analysis, and response evaluation.

Earlier systems primarily focused on text-based evaluation or keyword matching techniques. However, these approaches lacked contextual depth and often failed to capture nuanced responses. Recent advancements in prompt engineering have enabled LLMs to perform structured evaluation tasks based on predefined criteria such as technical depth, relevance, clarity, and fluency.

Despite these advancements, many systems lack integration between audio preprocessing, transcript structuring, and evaluation feedback generation within a unified pipeline. EVALORA addresses this gap through a modular AI-driven architecture.

II EXISTING SYSTEM

Currently the manual conventional interview process is the primary method used to evaluate candidates. In actuality human interviewers typically evaluate a candidate based only on their presence how they respond to questions and how they articulate their advantages and disadvantages. Despite allowing the examiner to apply human intuition and protocol knowledge this has a number of disadvantages that compromise the review process fairness and efficiency. It takes a lot of time to manually review interviews especially when the pool size is large.

Interviewers must manually review each interviewee fill out feedback forms and tally points. This adds to the interviewers workload and delays decision-making. Interviewers are of course subjective different people may interpret responses differently based on their personal experiences feelings at the time or other factors. Due to this lack of consistency and commonality applicants may be unfairly judged and compared.

A further drawback of the system is that it is hard to maintain consistent assessment across several interviews. And because the ratings ultimately rest upon human memory and judgment, it is difficult to know with exact clarity that every single one of these candidates are being judged by exactly the same standards. addListener language).These restrictions emphasize the need for a robust, automatic analysis of speech-based interview and scalable Interview Evaluation System (IES).

III PROPOSED SYSTEM

The system proposed Evalora, is an Interview evaluation framework based on AI to mitigate the drawbacks of manual methods previously employed for assessment. This technology is an automatic workload that analyzes job interview performance by processing video recordings of the interviews through a smart, uniform system. After the video uploading, the audio is extracted from down-sampled and preprocessed to improve the quality of speech to be correctly analyzed.

The audio is transformed into text by a state-of-the-art speech-to-text model, providing you with structured interview transcripts. Interviewer questions and candidate answers are then automatically extracted from the transcripts (questions-and-answers). Every such response are scored by a state of the art large language model according to pre-defined criteria including relevance, correctness, fluency and technical details.

Those responses are evaluated in the form of quantitative scores and corresponding qualitative feedback, which is made available to users through an easy-to-use web interface. Through normalised evaluation criteria, the proposed system aims to maintain objectivity, consistency and scalability of the framework for academic assessment, campus placement and recruitment screening.

Advantages of Proposed System

1. Automation of Evaluation Process

The system automates the entire process of interview evaluation without requiring ongoing human oversight. This saves a lot of time and effort in terms of evaluation which also leads to faster decision.

2. Objective and Consistent Assessment

Evalora uses the same measurement standards for all candidates in order to eliminate human biases and

subjectivity. This enables fair and consistent comparison across interviews and evaluators.

3. Scalability

The system supports simultaneous processing of multiple interview videos, leading to its potential for large scale recruitment drives such as campus placements and online screening.

4. Multi-Parameter Evaluation

The answers from the candidates are judged based on a number of dimensions, (a) relevance, (b) accuracy, (c) naturalness and (d) technical depth. This is a holistic and fairly assessment interview performance.

5. Detailed Feedback Generation

Additionally, it provides qualitative feedback of response scores for both applicants and reviewers to help them to find their „strengths and weaknesses.

6. Reduced Time and Resource Consumption

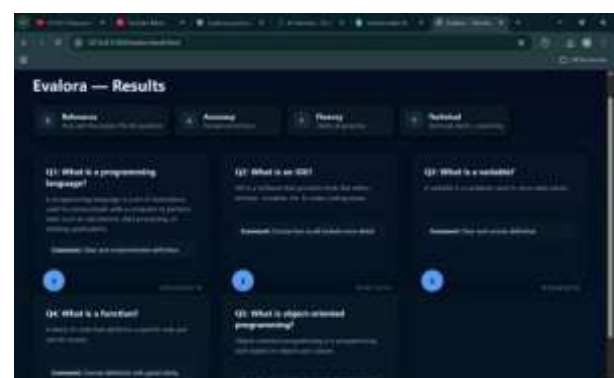
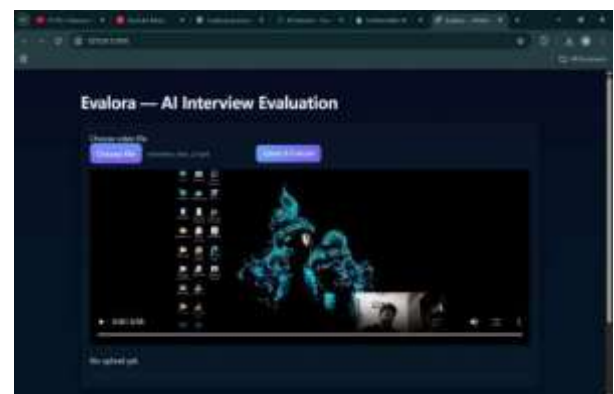
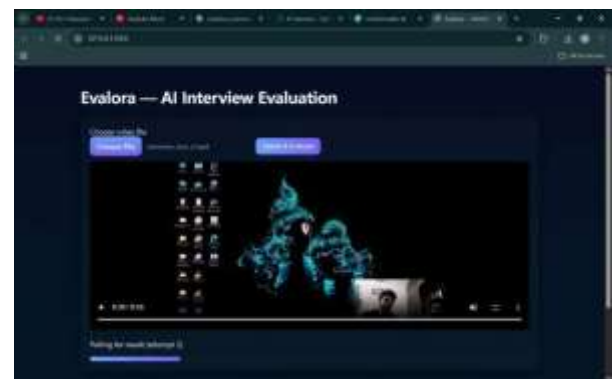
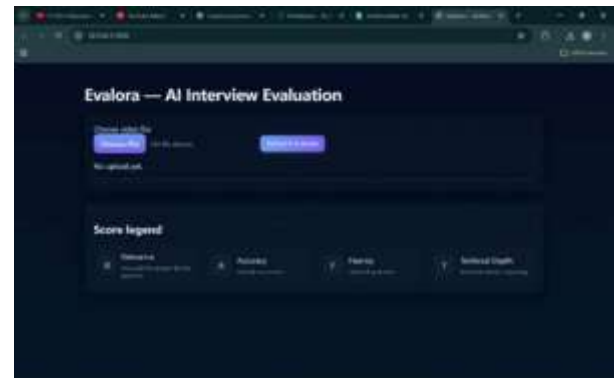
The system would act to streamline manual effort by automating routine tasks, thereby decreasing human resources and increasing productivity.

7. Structured and Organized Results

Assessment data are displayed in an accessible, well-organised way via a web-based interface that facilitates interpretation and record keeping.

IV EXPERIMENTAL RESULTS

The system demonstrated accurate transcription and consistent scoring across multiple interview sessions. Evaluation reports were structured clearly, enabling easy interpretation. The platform proved scalable and suitable for campus placements and recruitment screening.



SYSTEM ARCHITECTURE

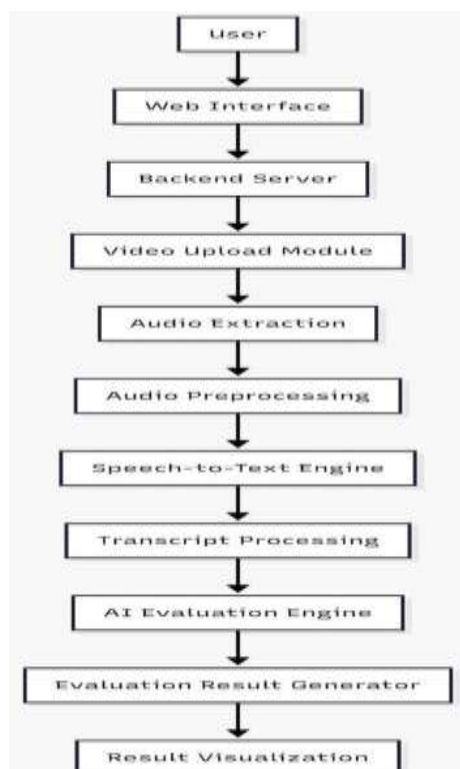


Figure : shows that Architecture Diagram

V CONCLUSION

We had developed Evalora, an AI-enabled interview evaluation system to automate and standardize the way of evaluating interview performance. Modern AI methods are applied to mitigate the limitations of conventional interview evaluation tools based on subjectivity, inconsistency and the amount of time required.

Evalora uses an organised and indication, modular pipeline to analyse recorded interviewer interviewee videos via video-to-audio extraction, pre-processing and AI-based audio answer evaluation. Through reviewing responses using predefined criteria including relevancy, correctness, fluency and technical depth, the system delivers standardized and impartial assessment results. The pre-trained AI models allow for the efficient realisation with no massive data collection or model training.

The system was evaluated in various functional and non-functional areas of reliability, usability and performance. The test results show that the system is functioning and generating meaningful evaluation reports. The user-friendly web interface offers an easy-to-understand result display for good usability.

In conclusion, Evalora proves the real-life usage of Artificial Intelligent for interview assessment. The initiative shows how AI-enabled systems can help humans make more consistent and efficient decisions. By adding emotion analysis, support of more languages and real-time corrections the current prototype could grow into a fully-fledged interview evaluation system.

VI REFERENCES

1. OpenAI, Whisper: Robust Speech Recognition via Strong Large-Scale Unsupervised Data Augmentation, OpenAI Documentation, 2022.
2. OpenAI, GPT Models and API Documentation -, OpenAI Platform, <https://platform.openai.com/docs>
3. Unpacking the contents of a Flask Documentation, FlaskWeb Framework, <https://flask.palletsprojects.com/>
4. McKinney, W., Python for Data Analysis, O'Reilly Media, 2017.
5. Pedregosa, F. et al., "Scikit-learn: Machine Learning in Python," Journal of Machine Learning Research, Vol. 12, 2011.

6. Librosa Development Team, The Librosa: Python Library for Audio and Music Analysis, <https://librosa.org/>