INTERVIEW ASSISTANT FOR COMPANIES

A Summer Internship Report

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Abstract :

The interview assistant is a Python Language that automates the interview process by asking a series of predefined questions, recording the candidate's answers through speech recognition, and evaluating the similarity between the candidate's answers and the expected answers. It provides feedback on the candidate's performance based on the similarity score. overview of the interview assistant, its motivation, methodology, model implementation, references, and a conclusion.

Motivation :

The traditional interview process can be time-consuming and subject to human bias. The interview assistant aims to streamline and standardize the interview process by automating question asking, answer evaluation, and feedback generation. By utilizing speech recognition and textual similarity techniques, the assistant provides objective evaluation criteria and reduces the impact of subjective judgment. The motivation behind the interview assistant is to improve the efficiency, consistency, and fairness of the interview process.

Methodology :

1. Preparing Questions and Answers:
    - The interview assistant includes a dictionary of predefined questions and their corresponding answers.
    - Each question has a unique identifier and is associated with its expected answer.
2. Speech Recognition and Text-to-Speech Conversion:
    - The script utilizes the speech recognition library to record the candidate's answers through speech recognition.
    - The pyttsx3 library is used for text-to-speech conversion to ask questions and provide feedback.
3. Similarity Calculation:
    - The interview assistant employs the TFIDF Vectorizer and cosine similarity functions from the sklearn library to calculate the similarity between the candidate's answers and the expected answers.

TF-IDF vectors are generated for both the candidate's answer and the expected answer, and cosine similarity is used to measure their similarity.

- The ‘time’ library can be used in an interview assistant to track and measure arious time-related operations, such as the duration of an interview, timing responses, and scheduling remainders.
- You can use the time library to calculate the duration of an interview by recording the start and end times and then calculating the difference.

4. Feedback Generation:

Based on the similarity score, the assistant provides feedback on the candidate’s performanceThe feedback comments are generated using predefined threshold to Categorize the performance as excellent, good, fine, or okay.

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5. Interview Flow:
    - The interview assistant follows a sequential flow, asking each question one by one.
    - The candidate's answer is recorded through speech recognition.
    - If the candidate requests a repeat or if speech recognition fails, the question is repeated.
    - The similarity score between the candidate's answer and the expected answer is calculated.
    - Feedback is provided based on the similarity score.
    - The process continues until all questions have been asked and evaluated.

Model implementation :

The interview assistant script is implemented in Python. It utilizes the pyttsx3 library for text-to-speech conversion, the speech recognition library for speech recognition, and the sklearn library for similarity calculation using TF-IDF vectors and cosine similarity. The question-answer dictionary is defined to store the predefined questions and answers. Helper functions are created to handle speech synthesis, speech recognition, similarity calculation, and feedback

generation. The script follows a sequential flow, asking questions, evaluating answers, and providing feedback.

Reference:

The interview assistant is developed using various Python libraries and concepts. Here are some references that were helpful in implementing it

https://www.geeksforgeeks.org/build-a-virtual-assistant-using-python/

https://www.mygreatlearning.com/blog/machine-learning-interview-questions/

https://www.etutorialspoint.com/index.php/386-tf-idf-tfidfvectorizer-tutorial-with-examples

https://www.machinelearningplus.com/nlp/cosine-similarity/

Conclusion :

The interview assistant provides an automated solution for conducting interviews. By leveraging speech recognition, text-to-speech conversion, and similarity calculation, it standardizes the interview process and reduces bias. The script allows for easy customization of questions and provides objective feedback on the candidate's performance. While there are limitations and potential areas for improvement, such as handling different question sets, customizing feedback, considering semantic understanding, and integrating with a user interface, the interview assistant represents a valuable tool in improving the efficiency of the interview process.