**Problem Statement**

To make the process of interviewing candidates easy and provide faster decisions on the selection of Candidate by creating a Personal Interviewing Assistant (PIA) which can convert the speech into text and create an analytical summary of the credibility of the candidate based on the Content and relevance to the job requirement

**Background**

The interview processes can be very overwhelming both to the interviewees and the companies as there would be thousands of candidates applying across the country for limited positions and the companies need to go through the arduous process of filtering out candidates at multiple levels. A personal interviewing assistant can help achieve the following - Create a personalized interview for each candidate based on the relevancy of answers to the required position and the modulation in tone. Based on the responses, it would analyze the overall performance of the candidate and provide a real time summary of the categories in which the candidate has exceeded expectations and which areas needed improvement. Based on the feedback the recruiting team can determine the kind of future interviews that need to be planned for further rounds for shortlisted candidates.

**Approach**

The idea is to design an AI based personal assistant. It can convert the answers provided by the interviewee into text and process the data based on predefined set of phrases or keywords (tokenization and stemming). It can deduce the sentiment of the speech through natural language processing and if the content matches the dictionary of phrases/phrases it would assign a positive sentiment, negative or a neutral sentiment in terms of relevancy. If the overall sentiment of the response is positive i.e. it aligns with the predetermined response, it would ask questions which would be more complex than previous question regarding any keyword or phrase from candidate’s response. At each layer a candidate’s performance score is calculated and if the candidate’s score crosses a predefined threshold he would be qualified for the 2nd round or he could be tested for programming round/behavioral round (This could also be scheduled as separate as a separate round by the assistant).

If the assistant generates a neutral sentiment on the initial response, he would be tested for a question on relatively similar topic as per requirement for the position and the aggregate scores are calculated.

If the assistant generates a negative sentiment on the 1st response, it can provide questions which are equally complex to recheck if the candidate might have a not answered properly due to nervousness. If candidate’s response provides a negative sentiment for multiple responses, the assistant scores the responses accordingly and it would have a minimum threshold score below which the interview would be terminated.

One of the challenges could be to determine the complexity of questions that needs to be put forward to a candidate. The assistant would determine the complexity based on the candidate’s resume which has factors such as Position Applied, Overall Experience, relevant experience and relevant skills possessed.

**Evaluation methodology**

1. The Assistant would be capable enough to assist the candidate’s response based on few factors such relevancy, if any real-life examples are provided, Achievement projected based on which the sentiment can be assigned.

2. It will calculate maximum threshold aggregate score, above which the candidate is qualified for next round

3. It will calculate a minimum threshold score below which the candidate is rejected.

4. If the candidates responses generate a neutral sentiment for multiple questions or the aggregate is in the range between min/max threshold, the interview would be terminated after a fixed number of questions (maybe 5 or 6) and it would be forwarded for human evaluation.

As the responses are recorded in the form of text, a recruiter can cross validate the responses.

Note: The efficiency of the assistant depends upon how best it can train itself (using advanced deep learning concepts) and could derive positive and negative sentiments rather than neutral sentiments.

**Challenges**

1. The primary challenge would be to create dictionaries/repositories to cover all the different positions available in the company and yet they need to be specific to each of the position without generating errors such as posting questions irrelevant to the position

2. Although the Assistant can be super-efficient but to finally hire a candidate human verification and confirmation would be needed to avoid false recruitments.

**Advancements**

1. An advancement to the assistant would be to determine the efficiency levels of the candidate not only the relevancy of the response but also behavioral factors such as confidence (voice modulations/frequency changes), fumbled words or repetitive sentences etc. It can furthermore reduce the need for recruiter involvement in further rounds.

**Advantages**

Conducting an interview process with the help of an Assistant can provide the following benefits:

1. It can assess the candidates performance on a comprehensive manner rather than it being a simple ATS system which filters based on few set keywords.

2. It can prove effective than a video interview which would again need a human to review the video recordings and

3. It can dynamically suggest on number of interview rounds needed for a candidate which can reduce the effort/cost from company’s point of view and wait times for candidates.

4. It can reduce the cost to companies on hiring recruitment personnel.