

# Interview Warmup: Revolutionizing Interview Preparation for Career Success

Sakshi Barkade<sup>1</sup>, Bushra Inamdar<sup>2</sup>, Mrinal Salunke<sup>3</sup>, Komal Sonawane<sup>4</sup>

<sup>1,2,3,4</sup> Computer Department, Zeal College of Engineering & Research, Pune (MH), India

**Abstract:** This project aims to create an affordable, dependable, and expandable web application for interview preparation that can be accessed from any location at any time. The platform offers users an effective method to get ready for interviews, enhancing their knowledge and boosting their confidence. By covering various technical and non-technical aspects, this web application enables users to broaden their understanding. It streamlines the preparation process by eliminating the need to search for information across multiple internet sources. The application features three primary functions: knowledge content, assessments on learned material, and a simulated HR interview. Mastering these components can increase an applicant's chances of securing employment. The system includes five major fields of study, each with beginner, intermediate, and advanced levels. Upon completing each level, users can evaluate their comprehension through tests. The application is designed to be user-friendly and accessible regardless of language barriers. Overall, this approach seeks to develop a cost-effective, reliable, and scalable web-based solution for comprehensive interview preparation, available anytime and anywhere.

**Keywords:** Placement preparation, AI, machine learning, skill assessment, personalized learning, mockinterviews, performance analysis, and interview readiness.

## INTRODUCTION

An interview is a face-to-face encounter between individuals. In everyday language, the term "interview" typically denotes a one-on-one conversation. This interaction involves two roles: the interviewer and the interviewee. The interviewer conducts the interview by posing questions and seeking responses, while the interviewee is the person who provides answers to these inquiries. The purpose of this approach is to offer a comprehensive platform for software engineering students to prepare for job interviews. The web application aims to tackle the challenges students face in organizing their preparation, locating relevant resources, monitoring their progress, and obtaining feedback and support feedback, the platform aims to optimize user performance, boosting their confidence and readiness for real-world interviews. This holistic approach ensures that users are well-equipped to meet the challenges of the competitive job market.

Developing proficiency in interviewing is essential for professional advancement in today's competitive job market. The "Interview Warmup Mock Interview Evaluator" is an innovative software solution designed to revolutionize interview preparation. This project utilizes artificial intelligence (AI) to create a thorough and adaptable platform for interview practice and enhancement.

The Interview Warmup addresses the obstacles that job seekers and students encounter when trying to enhance their interview skills. By employing advanced AI technologies, this application delivers a realistic and educational simulated interview experience. It not only facilitates practice but also provides crucial feedback, making it an indispensable tool for professional success. The "Mock Interview Evaluator" is designed to assist job candidates and students in improving their interview performance. The main objective of this project is to develop an automated system that replicates interview scenarios and offers feedback based on the user's performance.

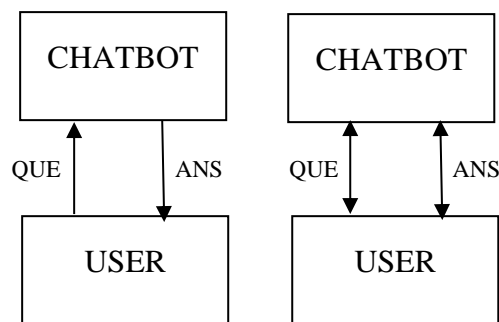


Fig.1. Classic Chatbot Vs Proposed Chatbot

## OBJECTIVE

The main aim of the system is to assess mock interviews based on various criteria and provide users with constructive feedback for improvement. The analysis offered is intended to assist individuals in enhancing their performance in subsequent interviews. This paper introduces an innovative AI-driven mock interview platform that seeks to improve interview readiness by evaluating candidates across three essential dimensions: emotions, confidence, and knowledge. By employing deep learning convolutional neural networks, the system examines facial expressions to assess emotional reactions, while speech recognition and natural language processing are utilized to measure the candidate's confidence levels. Furthermore, semantic analysis and keyword mapping are employed to evaluate the candidate's knowledge by comparing their responses with pertinent online resources. This holistic approach aims to alleviate pre-interview anxiety, increase confidence, and refine interview skills, thereby serving as a more effective preparation tool than conventional methods.

## PROBLEM STATEMENT

"What is the most effective way to evaluate and provide constructive feedback to job candidates participating in practice interviews, with the aim of enhancing their interview performance, self-assurance, and likelihood of obtaining their desired positions?" This question encapsulates the key challenges faced by mock interview assessors, including the need for well-defined evaluation standards, the capacity to offer helpful feedback, and the overarching goal of supporting candidates in their professional endeavors.

## LITERATURE SURVEY

YEAR: 2023

The COVID-19 pandemic has accelerated the adoption of augmented and virtual reality technologies across various sectors, particularly in education. It is important to investigate the applicability of VR training for technology-receptive learners. In this study, researchers created an immersive VR interview room system that allows pre-employment learners to experience a simulated environment. Pre-recorded interviewer questions are presented to learners, providing a realistic interview experience. The research focuses on examining the relationship between learners' perceived usefulness and interview self-efficacy in VR training within the context of human resources management.

## SYSTEM IMPLEMENTATION

### EXISTING SYSTEM

Software engineers may face various challenges during their interview preparation. One of the most prevalent issues is a lack of understanding regarding job requirements. This component focuses on crafting the application's user interface utilizing HTML, CSS, and JavaScript. It aims to create an adaptable and intuitive layout that enables users to effortlessly navigate the app's features and functions.

### PROPOSED SYSTEM

Many software engineering students encounter obstacles when preparing for job interviews, including disorganization, challenges in locating relevant materials, and inadequate progress monitoring. These issues can lead to poor interview performance, missed career opportunities, and diminished confidence. To address these concerns, a web application is needed to offer software engineering students a comprehensive platform for interview preparation.

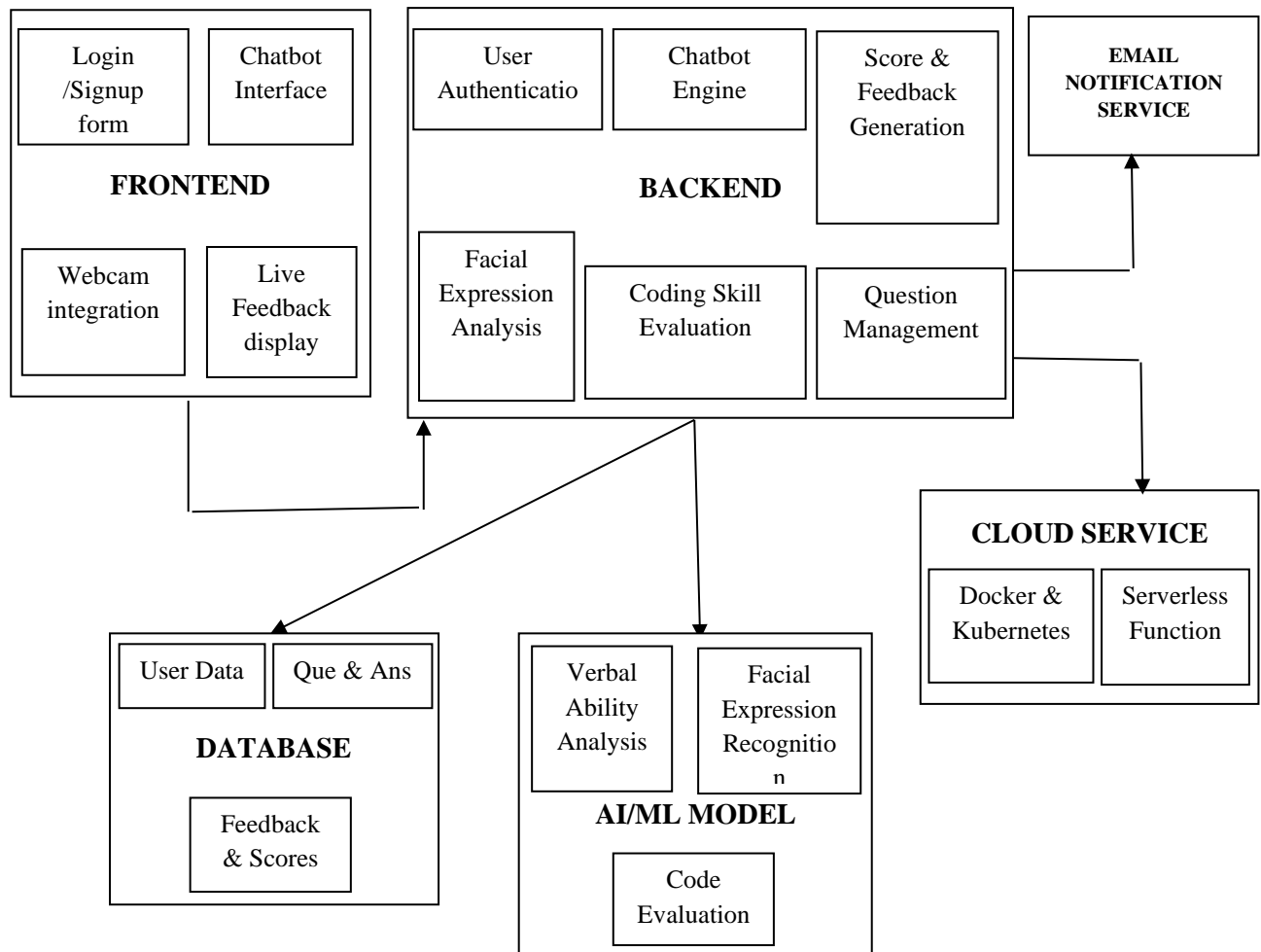


Fig.3. Proposed System Architecture

## SYSTEM ARCHITECTURE

The system architecture consists of interconnected layers that communicate via APIs. The Presentation Layer interacts with the Application Layer through RESTful APIs, which retrieve data from the Data Layer and return it in JSON format. The Application Layer also uses SQL queries to fetch or update database information in the Data Layer. Cloud services for web app hosting, user authentication, and data storage are provided by the Infrastructure Layer. The architecture is designed to be expandable, secure, and dependable, capable of accommodating numerous users while maintaining data privacy and confidentiality. The Python Flask framework and MySQL database are utilized to ensure easy maintenance and future scalability of the web app.

## SYSTEM DESCRIPTION

The Interview Warmup Web App for Software Engineering Students is created to offer a comprehensive platform for technical interview preparation. It includes features such as customized interview plans, practice questions, simulated interviews, progress tracking, and industry expert feedback. The system employs a multi-layered architecture, comprising presentation, application, data, and infrastructure layers.

## SYSTEM MODULE

The Interview Preparation Web App for Software Engineering Students comprises various modules, each serving a distinct purpose:

### ❖ FRONT-END DEVELOPMENT MODULE

This component focuses on crafting the application's user interface utilizing HTML, CSS, and JavaScript. It aims to create an adaptable and intuitive layout that enables users to effortlessly navigate the app's features and functions.

### ❖ BACK-END DEVELOPMENT MODULE

This segment handles the server-side aspects of the application, employing Python and the Flask framework. It encompasses the development of application logic and the integration of diverse modules and features to deliver a smooth user experience.

### ❖ DATABASE DEVELOPMENT MODULE

This unit is tasked with designing and implementing the application's database using MySQL. It involves establishing database schemas, tables, and relationships, as well as implementing necessary queries and constraints to maintain data consistency and integrity.

### ❖ LIVE VIDEO INTERACTION MODULE DEVELOPMENT

This module is tasked with developing the live video interaction capability of the application, utilizing WebRTC, an open-source initiative that supports real-time communication in web browsers and mobile applications via straightforward APIs. It combines multiple video streaming and conferencing APIs to allow users to engage with mentors and industry experts in real-time.

**❖ CHAT MODULE DEVELOPMENT**

This component focuses on creating the application's chat feature using the WebSocket protocol. It establishes a real-time communication channel between users and mentors, allowing for question-asking, feedback reception, and document and file sharing.

**❖ MOCK INTERVIEW MODULE DEVELOPMENT**

This module is dedicated to developing the application's mock interview feature. It involves designing and implementing an algorithm that assesses user responses to interview questions based on specific criteria such as clarity, relevance, and conciseness. Additionally, it integrates APIs that allow users to schedule mock interviews and receive performance feedback.

**❖ TESTING AND QUALITY ASSURANCE MODULE**

This unit is responsible for evaluating the application to ensure it meets stakeholder requirements and specifications. It involves developing and executing various test cases to identify and resolve issues, while ensuring the application is responsive, user-friendly, and secure.

**❖ DEPLOYMENT MODULE**

This component manages the application's deployment to a production environment. It involves configuring the server, installing and setting up necessary software and libraries, and ensuring user accessibility. It also implements essential security measures to protect against unauthorized access and data breaches.

## FLOWCHART

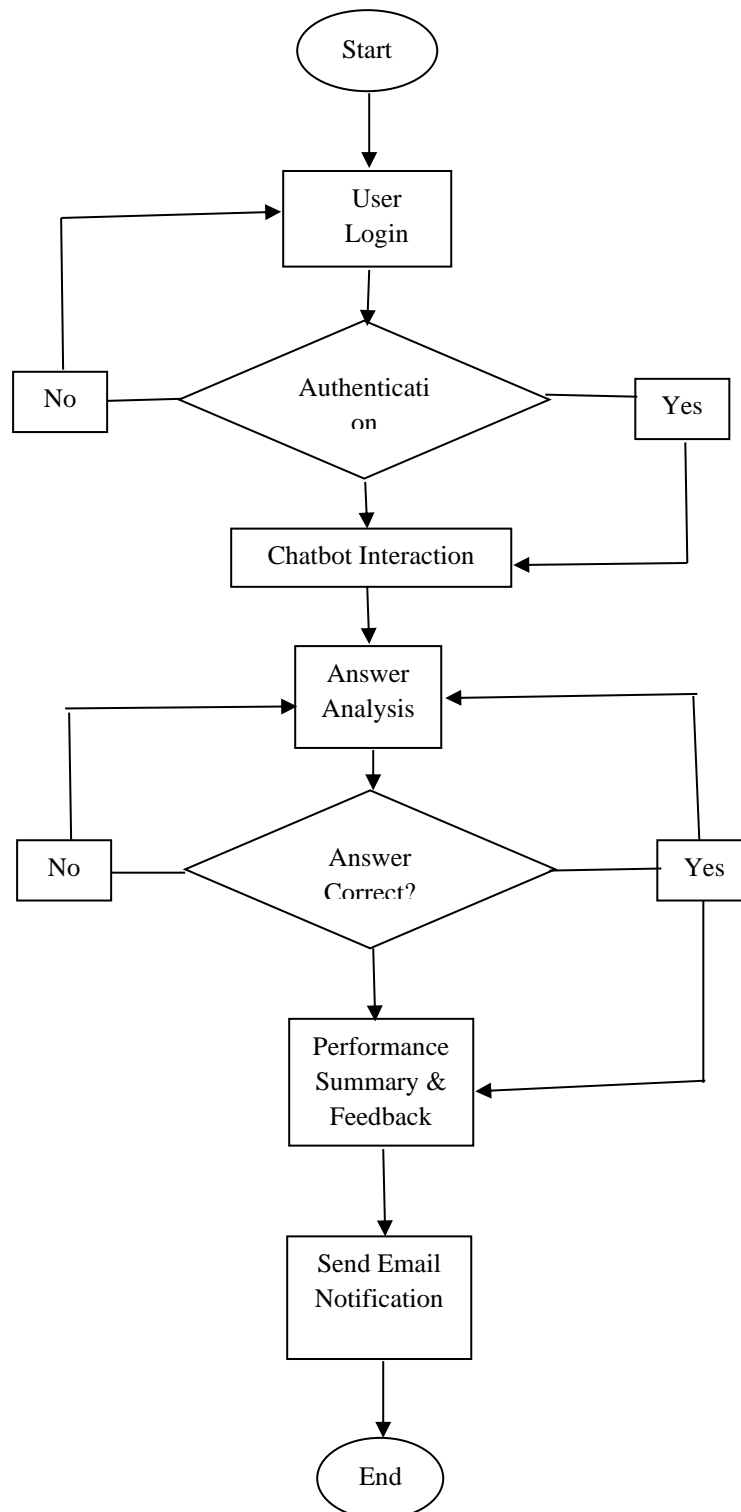


Fig.4. Flowchart

## EXPLANATION OF USE CASES

Our interactive chatbot application offers candidates various opportunities to enhance their interview preparation through different interactions. The main use cases include:

- ❖ **Question Asking:** Candidates can inquire about interview-related topics, industry-specific matters, or any other relevant information to aid their preparation by posing questions to the chatbot.
- ❖ **Question Answering:** The chatbot presents candidates with simulated interview questions, enabling them to practice formulating responses. After candidates provide their answers, the chatbot offers constructive feedback to help improve their responses.
- ❖ **Answer Refusal:** During the simulated interview, candidates may encounter questions they prefer not to answer. The chatbot respects this decision, allowing candidates to practice professionally declining to respond to certain questions.
- ❖ **Interview Acceptance:** Following a simulated interview, candidates have the option to accept the interview offer. This interaction mimics the process of agreeing to a job interview, providing a comprehensive learning experience

These use cases transform the chatbot application into a dynamic tool for candidates to practice and refine their interview skills in a realistic and interactive setting.

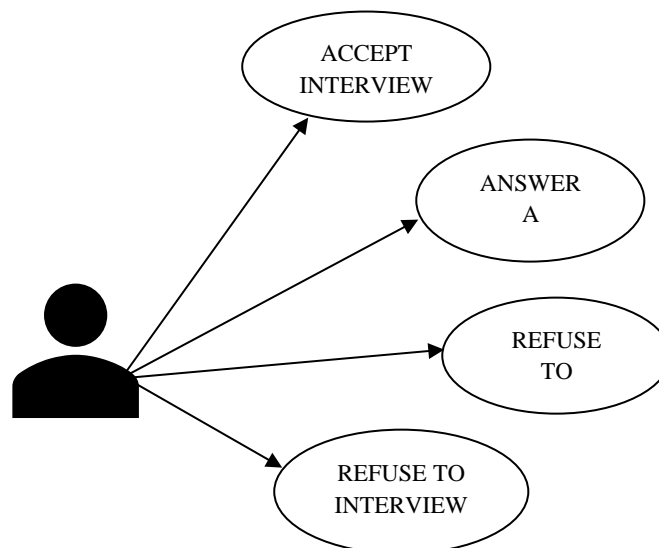


Fig.5. User Actions

## CONCLUSION

The Interview Preparation Web App for Software Engineering Students serves as a crucial resource, equipping students with various tools to enhance their job interview readiness. This platform offers mock interviews, real-time video sessions with industry professionals, aptitude assessments, coding tests, quizzes, and additional materials to bolster both technical and interpersonal skills. The system incorporates user authentication, registration and login functionalities, notification features, and a comprehensive dashboard.

## REFERENCES

1. Li, W., Guo, Z., & Liu, X. (2018). "Intelligent Job Interview Preparation: A Chatbot Approach." IEEE International Conference on Big Data (Big Data).
2. Wang, Y-C., & Tsai, Y-H. (2019). "Design and Evaluation of a Conversational Agent for Job Interview Training." International Journal of Artificial Intelligence in Education.
3. Bhargava, T., & Lehal, G.S. (2019). "Enhancing Employability Skills through a Chatbot-based Interview Simulation System." International Journal of Information Management.
4. Perun, S., et al. (2020). "AI-Driven Interview Training for Job Seekers: A Design Thinking Approach." Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems.
5. Sarardag, A., & Bayraktar, B.K. (2020). "The Impact of a Chatbot-Based Interview Simulation on Interview Performance and Interview Anxiety." International Journal of Human-Computer Interaction.
6. P. Kumar, P. Kumar, and A. Singh, "Design and development of an intelligent web-based learning management system for computer science education," International Journal of Emerging Technologies in Learning, vol. 14, no. 5, pp. 115-133, May 2019. <https://doi.org/10.3991/ijet.v14i05.9403>
7. M. M. Rahman, M. M. Hassan, and R. K. Khan, "Design and implementation of a web-based learning management system for computer science education," International Journal of Computer Science and Network Security, vol. 18, no. 10, pp. 11-18, Oct. 2018. <https://doi.org/10.18293/ijcsns.v18i10.8091>
8. R. K. Sharma, M. Bhatti, and M. Singh, "Design and development of a web-based system for student performance analysis," International Journal of Emerging Technologies in Learning, vol. 13, no. 12, pp. 171- 188, Dec. 2018. <https://doi.org/10.3991/ijet.v13i12.9053>
9. S. M. Al-Qahtani and M. I. Almajed, "Development of an intelligent e-learning system for computer science education," International Journal of Emerging Technologies in Learning, vol. 12, no. 9, pp. 199-214, Sep. 2017. <https://doi.org/10.3991/ijet.v12i09.7239>
10. H. Lu, C. Chen, and Y. Chen, "An intelligent e-learning system for computer science education based on personalized recommendation," Journal of Educational Technology & Society, vol. 20, no. 3, pp. 15-28, Jul. 2017. <https://www.jstor.org/stable/26376068>

## WEB LINK REFERENCES

1. Udacity-an online learning platform for software Engineering students:<https://www.udacity.com/>
2. Coursera-an online learning platform for software Engineering students:<https://www.coursera.org/>