Title: SkillsBridge: An AI-Powered Job Readiness Platform

1. Preface

It is not just about grades to get a job nowadays. It is all about whether you possess the right skills- and frankly enough, these are constantly changing. When graduating school a great number of students and fresh graduates reach a wall in their attempt to enter workforce. They find it hard because their skills do not quite match, they are not actually prepared to carry out interviews and frankly, the majority of them do not know what the job really entails. The traditional job board websites do not contribute much, either - they simply post inexhaustible lists. They do not prepare you on how to prepare to work. And that is why there is SkillsBridge. It is an AI-driven portal which assists you to bridge the gap between what you are capable of doing and what employers are seeking in actuality. The portal operates on a sophisticated Natural Language Processing, powered by Sentence-BERT, to extract the skills in your CV and compare them to jobs that best fit you - harvesting results of descriptions on sites such as LinkedIn and Internshala. Once you have chosen a job that you find interesting, the Ollama Mistral model generates interview questions that are specific to the job. Next, an AI avatar enters and performs an official interview, making it seem like a real one. It is followed by Google Gemini, which analyses your communication, technical responses and general performance and provides an in-depth feedback on the same and an individualised plan of action to enable you to level up. Combining the highest-quality AI and intelligent career data, SkillsBridge assists individuals to become job-ready, in truth, and continues to enhance with real and useful feedback. It follows suit with large-scale initiatives such as Skill India and Digital India, which demand an industry-ready generation of tech-savvy people who can become anyone and a confident, industry-ready   professional.
SkillsBridge is not any other job board with intelligent automation, powerful NLP, guided learning. It reverses the historic job hunting process and makes the whole process a personal event where you truly learn, plan, and win.

2. Objectives of the Proposed System

1. Create an AI-based platform linking candidates and companies through solving gaps in skills.
2. To obtain the accuracy of job matching with major platforms using NLP-based resume analysis.
3. To facilitate the AI-powered mock interviews and feedback to support individual upskilling.

3. Concept Deployed

AI-Powered Job Readiness Platform

SkillsBridge is not any other job site. It is a more intelligent way to prepare your next big move. Rather than simply displaying a list of jobs, it does scan your resume, identifies matches, conducts mock interviews with AI, and informs you where exactly you have to upgrade. In the background, SkillsBridge relies on a collection of sophisticated AI models and newer tools, thus, everything fits you. The goal? Reduce the stress of job hunting and make you feel a sense of confidence in getting one.

Key features:

1. **Managing unified authentication and resume data (Clerk, Supabase, MongoDB).**

   The system is a combination of Clerk, Supabase, and MongoDB to provide a smooth and secure user experience. Clerk manages the user authentication, registration, and role-based access, account security and identity verification. Supabase supports uploading of resumes and file storage, which offers reliable and scalable object storage and access control. Concurrently, MongoDB stores dynamic data of users, such as analyzed resume, skills, progress, and customized recommendation, which ensure the flexibility and fast retrieval. Together, these technologies create a single backend that is secure, scalable and real-time update optimized.

2. **Intelligent Resume Parsing and Skill Mining.**

   After customers place their resumes, the SpaCy and SBERT (Sentence-BERT) are used to extract and categorize essential skills, experience, and education information automatically. The identified skills can be used to make custom job recommendations and skills training proposals, as well as monitoring performance. This does away with manual data entry and guarantees contextual accuracy in the knowledge of user expertise.

3. **Thoughtful Job Fetching and Ranking Engine.**

   The platform uses the web scraping method to get the latest job listings on popular job sites like Naukri and Internshala. Following the collection of job data, the ranking engine uses a combination of TF-IDF and semantic similarities (SBERT) to evaluate the level of compatibility between every job description and abilities derived in the resume of the job applicant. This is the hybrid design which will give users very relevant job recommendations on the basis of the matching of skills to the role properly, as opposed

to the superficial coverage of a keyword, thus enhancing the job search and user experience.

4. Individualized Upskilling and Learning Pathway (Ollama, Gemini)

Through Ollama and Gemini, the platform recommends customized learning paths depending on the performance of the user in interviews and his or her skill shortages. The system examines the points where the improvement is necessary and recommends a rational plan of ideas and subjects to learn. This will be made to ensure that each user organizes a customized upskilling experience to support him or her in an ongoing upskilling experience and become employment-ready in a job-oriented progression of learning.

5. Smooth interactive Dashboards and Progress Tracking:

The platform is constructed using Next.js and Tailwind CSS and has responsive and intuitive dashboards. The users can see the extracted skills, matching jobs, learning suggestions, and status of application in real time. A Progress Tracker manages the growth process of all users, whether they need to learn something new or want to apply to an appropriate job, by enabling them to see their career progress in an effective way.

6. Secure Storage and Resume Management:

Supabase Storage is a secure place where user resumes, profile pictures, and supporting documents are stored. The files are encrypted and easy to get, thus, they are private and match the modern standards of data protection without adding complexity to the accessibility of the files by the backend processes.

7. On-the-fly Performance Monitoring and Analysis:

The platform will also have a real-time analytics dashboard showing user progress, skills development, and readiness to have interviews. With the help of Supabase real-time listeners and dynamic data visualization tools, users will be able to monitor their progress after every mock interview or learning session. It is this feedback loop that helps an individual to identify his or her strengths, monitor his or her weakness and make sound decisions as far as his or her career progress is concerned.

8. Scalable, Modular Architecture:

The entire system follows a modular high-level design:
- **Frontend:** Next.js, Tailwind CSS
- **Backend:** Supabase Functions, Python APIs (SpaCy, SBERT)
- **Databases:** Supabase PostgreSQL
- **External APIs:** Job APIs (Naukri, Internshala), Gemini, Ollama
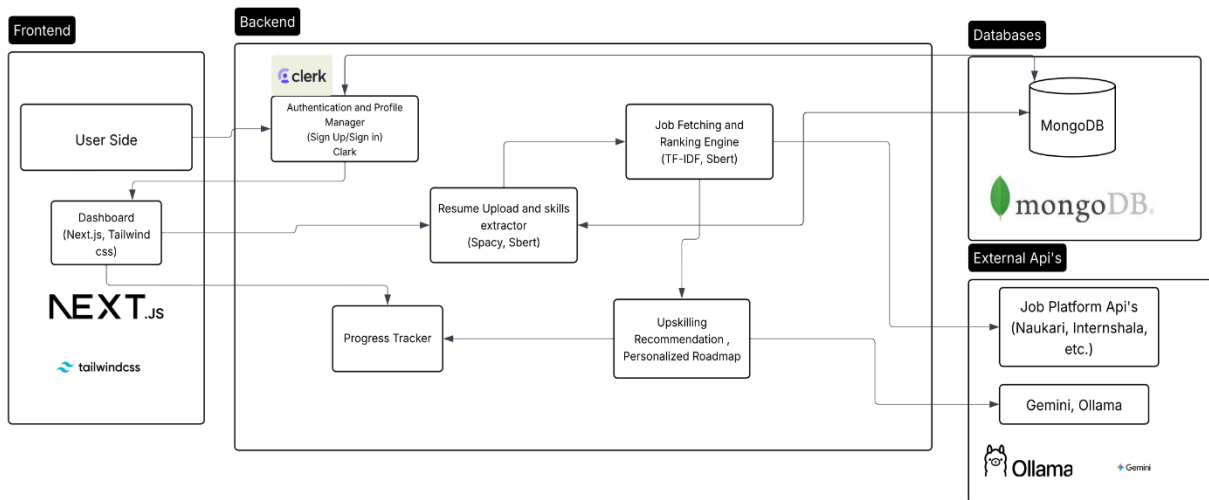
4. Distribution:

1. User Interface: The site allows job seekers to engage with the site using a responsive web interface where they can post their resumes, receive custom job descriptions, undergo AI mock interviews, and view their performance metrics.

2. AI Processing Layer: Ollama (Mistral) and Gemini can be used to generate interview questions, assessment and create custom learning pathways with combined AI processes.

3. Backend Infrastructure: Supabase will be utilized to authenticate and synchronize the data of users in real-time, and MongoDB will be used to store the information of users in the form of resumes, interview data, and job adverts received during the web scraping of Naukri and Internshala.

5. Key Technologies:

1. Clerk Authentication: It is applied in the secured sign-up and sign-in process, and it is an active means of dealing with the user sessions and roles to manage the security of the data and control access.
2. Supabase: Manages real-time updates, resume information, and user progress tracking. It also enables rapid API calls and facilitates seamless backend communication.
3. MongoDB: It will be taken as the repository of user profiles, resumes, historical record of interviews and job adverts received via websites like Naukri and Internshala.
4. Next.js (Frontend): The core user interface will be built on Next.js to ensure the most optimal speed, responsiveness, and search engine-friendly outcomes in order to deliver users an expeditionary and contemporary web experience.
5. Python (Backend): Handles important logic in NLP processing, job matching with the help of TF-IDF and SBERT and combines AI models, such as Ollama and Gemini.
6. Ollama (Mistral Model): Generates AI-based simulation of interview question, depending on the chosen job description and skills.
7. Gemini API: Assesses user interviews and creates custom learning paths, based on the detected skill gaps.

6. Authors:
1. Mr. Omkar Ghodekar
2. Mr. Utkarsh Salunke
3. Mr. Raj Wagh
4. Ms. Sandhya Dhaygude
5. Dr. Madhuri A. Potey
6. Mrs. Yasmin S. Khan
7. Ms. Pooja Tambe