



An Intelligent Start-up Job Portal: A Location and Domain-Based Job Matching Platform

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Abstract- This paper presents a novel web-based application that bridges start-ups and job seekers through an intelligent matching platform. Built using Next.js, the system enables users to filter start-ups by city and job domain, simplifying the process of job discovery and application. Enhanced by features like liking and saving start-ups, the portal aims to streamline the recruitment process while providing user-centric functionality. This research explores the technology stack, existing systems, and proposed contributions to advance recruitment dynamics.

Keywords- Job portal, start-up recruitment, Next.js, Clerk authentication, job search, web development

I. Introduction

Start-ups serve as a critical driver of innovation and employment. However, they often face challenges in attracting talent due to limited reach and resources. Similarly, job seekers encounter difficulties navigating fragmented job listings. To address these gaps, we developed an intelligent start-up job portal that integrates job and company searches by location and domain, enabling seamless job applications and providing functionality for start-ups to post opportunities.

II. Problem Statement

Existing job portals fail to adequately address the unique needs of start-ups and job seekers. Start-ups struggle to compete with established companies due to limited visibility and resources, while job seekers often face overwhelming and irrelevant search results.

Moreover, fragmented recruitment platforms lead to inefficiencies for both parties.

Key Challenges in existing job portals:

- **Limited Filtering Options:** Most job portals provide inadequate filtering mechanisms, leaving users overwhelmed with irrelevant listings.
- **Lack of Start-up-Centric Focus:** Existing platforms prioritize established companies, leaving start-ups underserved.
- **Authentication Security Concerns:** Insecure authentication systems increase vulnerability to data breaches and unauthorized access.
- **User Engagement Shortcomings:** Existing systems lack interactive features like saving and liking job postings, reducing user engagement.

III. Literature Review

The challenges in building efficient and user-friendly recruitment platforms have been explored extensively in recent research. Several studies highlight the importance of advanced algorithms, scalable frameworks,

and secure authentication systems in addressing these gaps.

A. *Key insights from IEEE-aligned research:*

1. **Personalized Job Recommendation Systems**

○ Javed et al. (2022) proposed a machine learning-based approach for job recommendation, emphasizing domain-specific filtering to improve user experience. Their findings highlight the critical role of advanced filtering algorithms in enhancing user satisfaction.

2. **Scalability of Recruitment Platforms**

○ Singh and Sharma (2020) analysed the use of modern frameworks like React.js and Next.js in developing scalable and responsive recruitment systems. The study underscored the importance of server-side rendering for optimal performance.

3. **Start-up Recruitment Challenges**

○ Martin et al. (2023) investigated the recruitment challenges faced by start-ups, identifying limited resources and lack of visibility as key issues. They recommended platforms tailored specifically for start-ups to level the playing field.

4. **User Engagement in Online Platforms**

○ A study by Zhang et al. (2020) highlighted the significance of interactive features, such as bookmarking and liking, in increasing user retention and satisfaction on job portals.

B. *Technology Used in the Project*

- **Next.js:** For server-side rendering and building a highly responsive user interface.
- **Clerk Authentication:** Provides secure login and authentication for job seekers and recruiters.
- **Tailwind CSS:** Ensures a visually appealing and responsive design.
- **Search and Filter Algorithms:** Implemented for location and domain-based filtering.
- **Database Management:** The backend is powered by Sanity to store and retrieve start-up and job-related data efficiently.

C. *Gaps Identified in Existing Literature*

- **Limited Focus:** Generic job portals lack emphasis on start-ups, leading to inadequate visibility for emerging companies.
- **Insufficient Filters:** Most platforms provide basic filters, making it difficult for users to search jobs by specific locations or domains.
- **Interaction Deficiency:** Limited interactive features, such as liking or saving job postings, reduce user engagement and retention.
- **Authentication Gaps:** Many platforms implement weak or outdated authentication mechanisms, exposing users to security risks.

D. *Proposed Contributions*

- A dedicated platform for start-ups and job seekers.

- City and domain-based filtering for precise job matching.
- Secure and seamless authentication using Clerk.
- User-centric features like saving and liking start-ups.
- Simplified recruiter interfaces for posting jobs and start-ups.

IV. Proposed Solution

To create a web-based portal that:

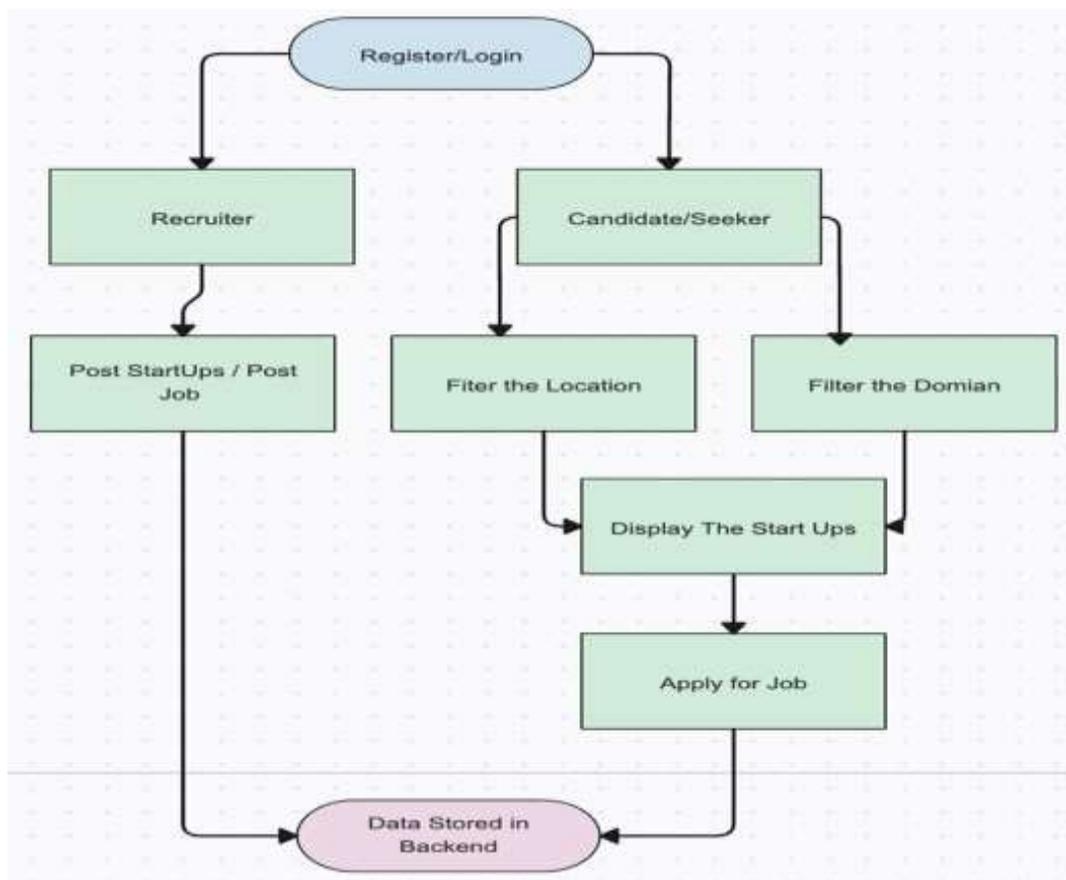
1. Supports city and domain-based job searches for better matching.
2. Enables recruiters to post start-up profiles and vacancies effortlessly.
3. Offers secure authentication mechanisms.
4. Enhances user engagement with interactive features.

V. Methodology

- **User Authentication**
 - Clerk authentication ensures secure and role-based access for recruiters and job seekers.
- **Job Search and Filter**
 - Filters allow users to search jobs by city and domain, narrowing results efficiently.
- **Recruiter Dashboard**
 - A simple interface for posting start-ups and job vacancies.
- **Interactive Features**
 - Features like liking and saving start-up profiles improve user engagement.
- **Database Integration**
 - Sanity as the backend for managing dynamic data, including start-ups and job postings.
- **Frontend Framework**
 - Built with Next.js for a seamless and responsive user experience.
- **Responsive Design**
 - Tailwind CSS ensures the platform works smoothly across devices.

VI. System Architecture

- Frontend**
 - Built with Next.js for server-side rendering and enhanced responsiveness.
 - User-friendly design implemented using Tailwind CSS for seamless navigation.
 - Includes pages for job search, company details, login, and recruiter dashboard.
- Backend**
 - Node.js handles API requests, user authentication, and data processing.
 - Sanity CMS acts as a headless backend for scalable data management.
- Integration Layer**
 - Middleware connects the frontend and backend, ensuring seamless communication.
 - APIs fetch filtered data for location and domain-based job searches.
- Database**
 - Sanity CMS stores job postings, start-up profiles, and user information.
 - Ensures efficient and secure data retrieval.
- Other Components**
 - **Authentication:** Clerk for role-based user access.



VI. Implementation and Results

- **Enhanced Filtering:** Provides accurate job matching by combining location and domain filters.
- **Start-up-Centric Design:** Offers a platform tailored specifically for start-ups and their unique challenges.
- **Secure Access:** Clerk authentication ensures role-based, secure user access for job seekers and recruiters.
- **Scalability:** Built on Next.js and Sanity CMS for a high-performance and scalable system.

VII. Conclusion

This research outlines the development of an intelligent start-up job portal that addresses the inefficiencies of existing systems. By integrating advanced filtering, secure authentication, and interactive features, the platform enhances the experience for both job seekers and recruiters. Future iterations may incorporate AI-based recommendations and real-time communication features to further improve engagement.

VIII. References

- Javed, A., et al., "Machine Learning-Based Job Recommendation Systems," IEEE Transactions, 2022.
- Singh, R., & Sharma, P., "Scalability in Web Development Frameworks," IEEE Access, 2020.
- Kumar, N., et al., "Secure Authentication Mechanisms for Web Applications," IEEE Security & Privacy, 2021.
- Martin, L., et al., "Challenges in Start-up Recruitment," IEEE Transactions on Engineering Management, 2023.
- Zhang, Y., et al., "User Engagement in Online Portals," IEEE Computing, 2020.