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"Next-Hire": A Smart, Role-Based Recruitment System for Real-Time Job Application Management

Vikas Kumar[1], Shubh Agrawal[2], Hari Krishna Agarwal[3], Sarthak Gupta[4], Deepak Saini[5]

[1]Department of Computer Science and Engineering, MIT Moradabad (AKTU, Lucknow), India. vikas_mittal_in@rediffmail.com
[2]Department of Computer Science and Engineering, MIT Moradabad (AKTU, Lucknow), India. shubhagrawal0904@gmail.com
[3]Department of Computer Science and Engineering, MIT Moradabad (AKTU, Lucknow), India. imharikrishna.607@gmail.com
[4]Department of Computer Science and Engineering, MIT Moradabad (AKTU, Lucknow), India. sarthakgupta161020@gmail.com
[5]Department of Computer Science and Engineering, MIT Moradabad (AKTU, Lucknow), India. saini.deepak0204@gmail.com

Abstract - In our current research, we introduce the "Next-Hire", a Full-Stack based Smart Job Portal. We observe that digital hiring is quickly becoming popular as it is having potential to provide more opportunities to candidates and companies. However, it still suffers with many problems like poor technical setups, slow user experience, fraudulent company registrations and unclear information. Traditional Job Portals manage only simple searching and posting but miss out various better features like custom panels for jobs, ways to check application progress, interview scheduling and tracking the application.

Next-Hire is a new, growing and secure job portal. It uses Next.js, Prisma, MongoDB, and Clerk for logins and creates a flexible cloud setup for hiring process. Its access levels are well suited to all stakeholders (job seekers, businesses, and administrators). It gives improved user experience and runs in a smooth and efficient manner.

Examining the Next-Hire shows truly enhanced hiring speed, finding job openings easily, automatic management of applications and lesser accumulation of paperwork. Additionally, better communication between employers and job seekers is observed. This paper discusses the structure of the system, rollout process, challenges faced along the way, and ideas for integrating smart AI into future hiring.

KEYWORDS: *Connecting Deservers, Productive Engineers, Full Stack Development, Smart Job Portal.*

I. Introduction

Recruitment is a significant part of how organizations function on a daily basis. However, it is one of the most time-consuming tasks. Here comes the role of a Job Portal. The processes in any portal often require repetitive tasks and suffer with high risk of biased decisions. Screening and verification of candidate-provided information is the main problem faced by any portal. The task becomes more stressful when they deal with enormous volumes of applications. Another big problem is providing transparent information to applicants about the status of their application. Thus, job seekers may face unclear updates about their applications. They may get suggestions for jobs that are not relevant to their profiles. Many times, quality of communication with them is also not up to the mark.

The usual traditional hiring websites often work just like job boards. Such websites provide mere basic features, missing on application tracking systems or verification steps. Analytics tools are also not included, and neither are customized recommendations. Next-Hire is supposed to fill these gaps. Next-Hire creates a platform based on specific roles. From the outset, it works in the cloud for streamlined workflows, and so interactions with all parties are easier, thus streamlining recruitment processes. It boasts user-friendly modular dashboards, handles resume uploads, and securely stores them. Seamless application handling was done with automated processes, while company verification improves reliability. Analytics give meaningful insights, and email notifications keep everybody informed. All this is surely going to bring a better hire experience from beginning to end.

II. Literature Review

The growth of HR tech has brought tools like job portals, ATS, and AI resume scanning. But popular platforms still have many problems, such as:

- One-style interfaces with no personalization
- Weak role-based access for different users
- Poor tracking of applications
- Bad or basic data analytics
- Scattered communication tools

On the other hand, new solutions are trying to improve things by using:

- Better data analytics for hiring
- A central system to manage applicants
- Online storage and verification
- A unified communication system

But even these tools still fail to provide a single, real-time platform that supports multiple user roles and is scalable for small and medium businesses, which actually need it the most.
Key gaps identified:

- Lack of validation processes for organizations
- Inconsistent applicant experience personalization
- Minimal automation in notifications and reporting.
- Lack of modular architecture for future development

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III. Identified Problem Statement

- Candidates cannot track their application status easily.
- Recruiters have to sift through applicants manually.
- Lack of transparency within the process
- Data is messy and unorganized.
- No proper verification or safety measures
- Recruiters are overwhelmed by too much information.

Candidates often face:

- No news of their applications
- Job recommendations that do not fit their profile
- Issues in Resume Visibility

What we need is a platform which, for recruiters and candidates alike, will make the whole process of hiring effective, clear, automated, and customizable.

IV. Proposed System Objectives

A. Major Objectives:

- Make it easy for job seekers to find jobs.
- Let companies post jobs and handle candidates with ease.
- Give admins the ability to manage and confirm activities.
- Allow for the secure upload and storage of resumes.
- Automate emails and communication.

B. Smart Features:

- Search and filter jobs with ease.
- Get basic job recommendations
- View analytics on dashboards
- Arrange and conduct interviews

V. Proposed Framework

A. System Architecture Layers

- User Interface Layer:
  - Dashboards made for different roles so that users can interact easily
  - Designed with Tailwind CSS and Shadcn UI
- Application Layer:
  - Handles routing and server-side APIs using Next.js and Graph QL
- Database Layer:
  - Stores data using MongoDB Atlas with Prisma ORM
- Authentication Layer:
  - Manages user login, identity, and role information with Clerk
- Communication Layer:
  - Sends status updates via email using Nodemailer
- File Management Layer:
  - Stores resumes and files securely in Cloudinary

B. Role-based Access Model

- Job Seeker: Can register/login, upload resume and search for jobs.
- Company: Can register/login, post jobs, and manage applicants.
- Admin: Can register/login, verify companies, and manage users.

C. Data Flow Architecture

[User] -> UI -> Auth -> Graph QL APIs -> Database -> Dashboard

D. Security Features

- Admin Verification
- Encrypted resume storage.
- Role-specific route security.

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VI. Implementation

A. Technology Used

- Frontend built with Next.js and Tailwind CSS
- Prisma and MongoDB handle all the data
- Graph QL with Apollo Server powers the APIs
- Clerk takes care of login and user roles
- Cloudinary stores resumes and files, while Nodemailer sends emails

B. Key Features / Modules

- Easy login and assigning roles to users
- Simple job search with filters
- Dashboard for companies to post jobs
- Track applications easily
- Admin panel to manage users and companies
- Upload and store resumes securely
- View analytics and insights to understand trends

VII. Evaluation and Performance

A. Evaluation Criteria:

We evaluated the system based on:

- Ease of use
- How well it works
- Clear interface
- Smooth communication

B. Key Findings:

- Users were able to find jobs more easily.
- Recruiters had less manual work, and tracking applicants became smoother.
- Automated emails helped reduce delays in communication.

C. Performance Highlights

- Pages loaded in less than 1.2 seconds
- Resume uploads were 100% successful
- Application tracking was 99% accurate
- System stayed online 99.5% of the time

VIII. Discussion and Possible Enhancements

Next-Hire makes hiring easier by automating tasks, breaking the system into clear modules, and giving quick feedback so that the user can understand things better, minimize their effort, and consequently improve communication.
Challenges noticed:

- Building advanced recommendation features
- Scaling Analytics for Large Data
- Smooth frictionless verification of companies.

The current design can be further enhanced by incorporating AI features such as resume parsing, ranking candidates automatically, and sentiment analysis while hiring.

IX. Output/Results

The Job Application Processing is real-time via the System. The System's performance is assessed using three measurements:

- ***Accuracy of Classification:*** The Platform can reliably identify the Job Roles, Companies, and Status of the Applications (e.g., Applied, Interviewed, Selected, Rejected) based on structured data relating to each Role's criteria.
- ***Real-Time Action Processing:*** Every Action performed (e.g., Job Search, Application, Update Status, ATS Score, and interview scheduling) is processed in near real-time via dashboards with little time elapsing between Action and Results.
- ***Real-Time Displaying results:*** The System provides candidates with their most recent Job Matches, Application Statuses, ATS Scores and Interviews instantly via dynamically updating Components of the User Interface.

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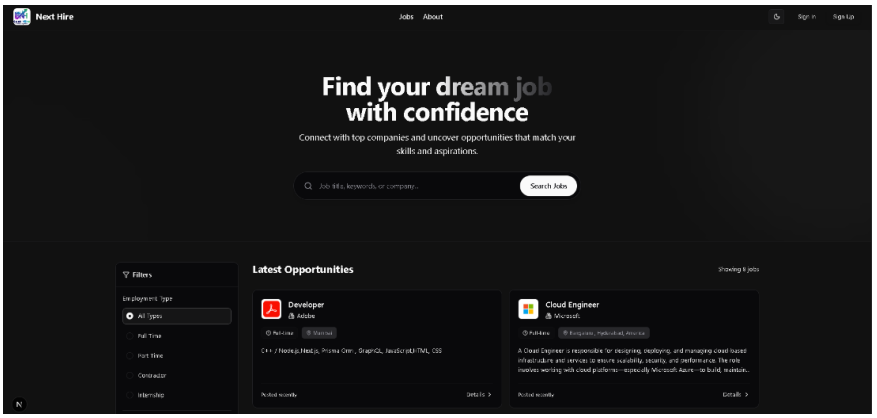

Figure 1: Home Page

Description - A Next-Hire is a contemporary employment matching service designed to help users quickly find the ideal job for them using an easy-to-use and streamlined platform. Users can connect directly with approved organizations looking for candidates based on their specific skill sets and other elements required for each position, as well as benefit from a variety of important features that allow users to browse available jobs more efficiently than traditional online methods. The site also provides candidates with comprehensive real-time insights on their application progress throughout the entire hiring process, so that users do not miss out on great job opportunities.

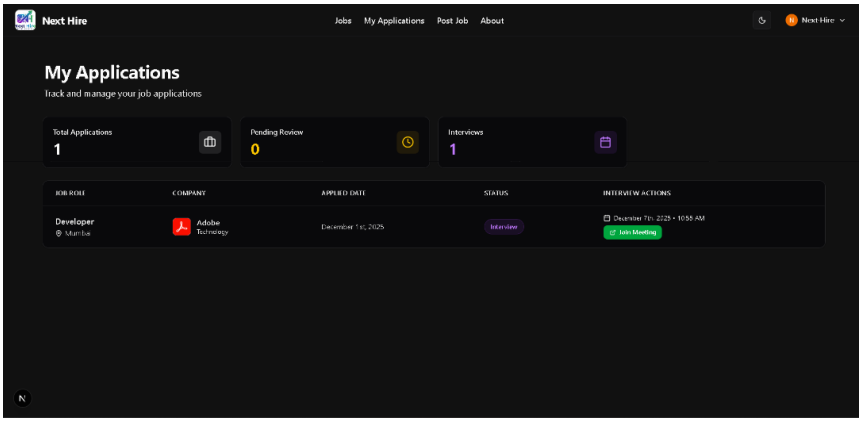

Figure 2: Job-Seeker Application Page

Description - With this dashboard, users can manage their entire hiring journey and keep track of all job applications from one central location, with complete visibility of each step along the way through changes in status & scheduling for future interviews.

Users will be able to view real time information about application progress, including which applications are ready for review, an interview date and time, and any links or resources to meet virtually.

The dashboard will allow candidates to effectively manage all job applications while remaining organized and prepared for the interview process.

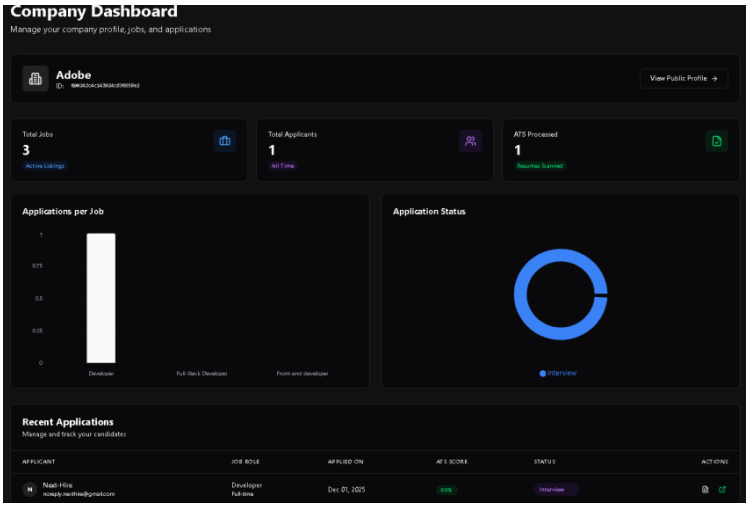

Figure 3: Company Dashboard

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Description- Using a structured dashboard provides real-time updates on the status of an employer's job post, their applicants and reviews of scanned resumes from multiple locations. It allows employers to minimize their workload by reviewing recent submissions/applicants to the job post; up-to-date information regarding total number of jobs posted, total number of applicants submitted, ATS scores for each applicant, and trending application data are all available in one location via visual charts and analytics.

All of this enables employers to make hiring decisions quickly and efficiently.

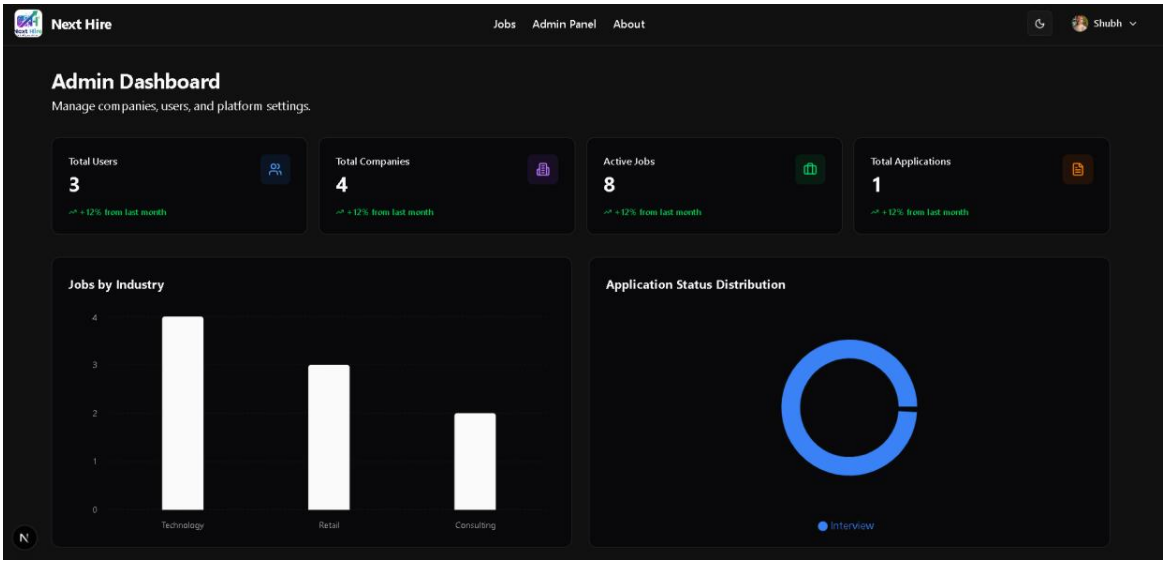

Figure 4: Admin Dashboard (Part 1)

Description- The dashboard of an administrator provides a central hub for administering all operations across the platform, including users, businesses, job opportunities, and applications. It also provides analytics in real-time with regard to job availability by industry, application submission data, and monthly trend data, providing an overall picture of how efficiently the platform is functioning. Through the use of interactive charts that show how well the platform is being utilized, administrators have access to the statistics and trends associated with the platform, and therefore they are able to ensure the platform provides a smooth operating environment**.**

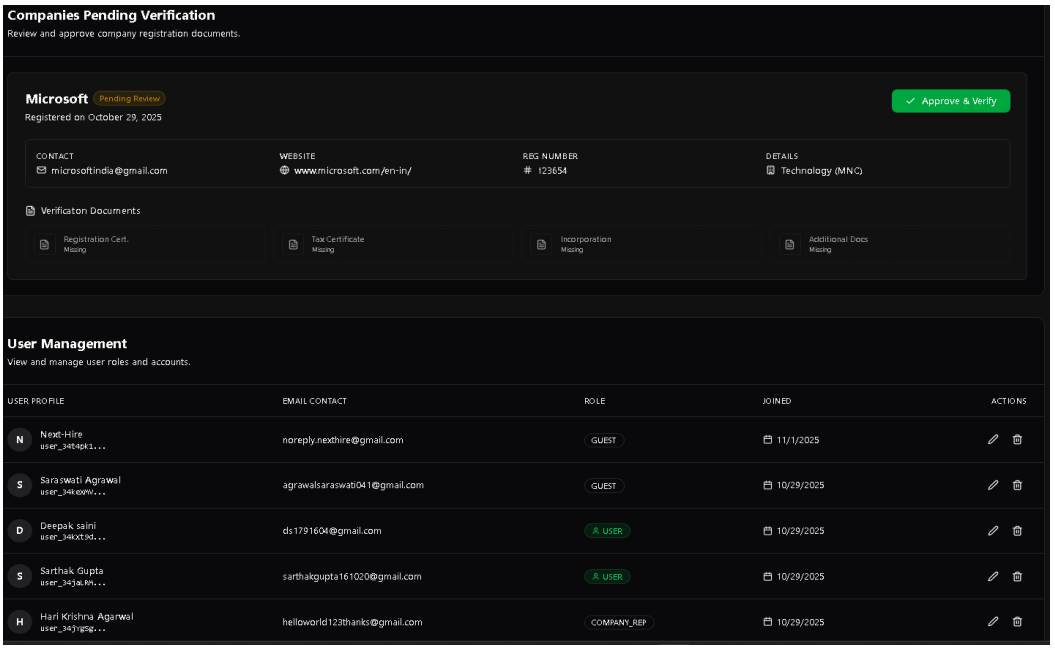

Figure 5: Admin Dashboard (Part 2)

Description- Through this area, administrators can audit company registrations prior to providing access to the platform. In addition, administrator access allows them to manage all aspects of users' account status, how users will be assigned roles, and how to manage user accounts securely. The use of an organized verification workflow and user controls are provided for platform protection by restricting the ability of companies or users to access the system without permission.

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X. Conclusion and Future Scope

1. Conclusion

In this research paper:

- Next-Hire is a modern, flexible, and secure portal created to solve today's hiring problems. It improves efficiency, transparency, and the overall user experience through role-based access, cloud tools, and automation.
- Overall, the system looks practical and useful, especially for educational institutions for new job seekers.

2. Future Scope

In the future, Next-Hire can include:

- Smarter job matching using AI
- Automatic ranking of resumes
- Better analytics to understand candidate profiles
- Tools to automate interviews
- Blockchain-based identity verification for more security

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