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AI Powered Recruitment System

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Abstract
Artificial intelligence in recruitment provides a revolutionary answer in today's cutthroat hiring environment. An AI-Powered Recruitment System that was created in two organized stages is presented in this study. Phase 1 creates an HR dashboard and user-friendly frontend that facilitates resume uploads, candidate management, and job postings. AI-driven automation for resume parsing, aptitude test assessment, group discussion scheduling, and interview coordination is introduced in Phase 2. The solution improves the candidate experience and recruiter control by integrating real-time notifications, progress tracking, and filtering. The approach decreases human bias, speeds up decision-making, and improves recruitment transparency by automating every step and utilizing sophisticated filtering. A more efficient and successful hiring process that facilitates well-informed talent acquisition is the end outcome.
Keywords: *HR Dashboard, Aptitude Test, Interview Scheduling, Resume Parsing, and Recruitment Automation*

1. Introduction
In recent years, hiring demands have grown more complex with the increasing number of applicants and dynamic job market needs. Traditional recruitment methods often involve repetitive tasks, subjective judgment, and significant delays, which reduce the overall efficiency of the process. To solve this, the integration of artificial intelligence in recruitment has emerged as a modern-day necessity. By enabling automation in the screening and evaluation process, AI helps organizations streamline hiring while minimizing human bias. The proposed AI-Powered Recruitment System aims to automate the end-to-end hiring process by utilizing a two-phase development approach. In Phase 1, the focus is on building a user-friendly interface for HR personnel and candidates. It includes modules such as job posting, registration, resume uploads, and a central HR dashboard to manage all recruitment data. This phase lays the foundation for digital hiring workflows and ensures smooth data handling for the AI-based operations that follow. Phase 2 introduces intelligent automation that transforms traditional recruitment into a data-driven, efficient, and scalable process. It encompasses resume parsing through natural language processing, automated aptitude test generation and evaluation, and structured interview scheduling. Every selected candidate progresses through a well-defined path, receiving automated notifications at each stage, leading up to the final offer letter. This system not only reduces HR workload but also ensures consistent and merit-based selection. Recruitment today requires tools that reduce time and increase accuracy. Manual screening and communication slow down hiring cycles. To address these challenges, we developed an AI-Powered Recruitment System that streamlines each step of the hiring process. Our system uses AI to automate resume screening, aptitude test analysis, and interview scheduling. The proposed model ensures faster hiring with fewer errors and greater transparency, significantly reducing HR workload.

2. System Architecture
The system is structured around a modular two-phase architecture, integrating frontend interfaces, backend

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services, and intelligent automation tools. Phase 1 sets up the foundational infrastructure including dashboards, user interfaces, and secure databases. Phase 2 introduces AI-based modules for automated decision-making and real-time communication. Figure 1 shows Flow Chart [1-3]

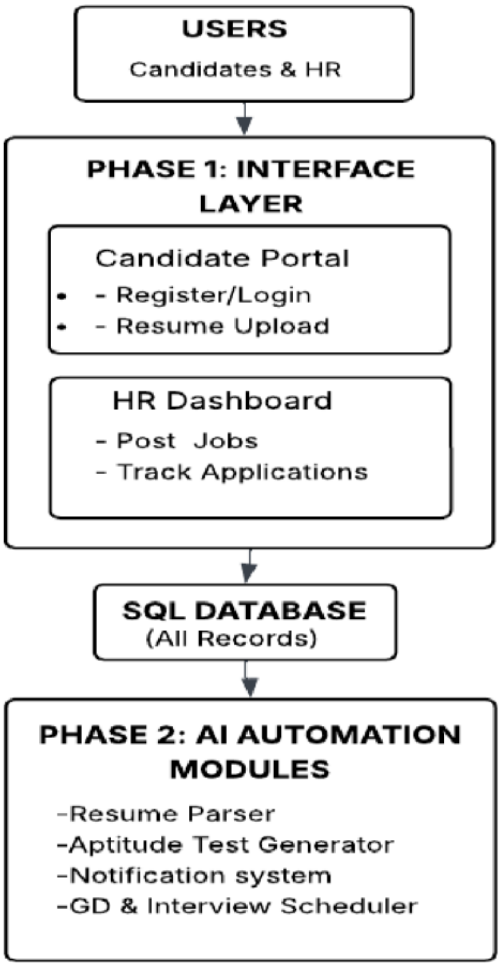

Figure 1 Flow Chart

2.1. Phase 1: Frontend and HR Dashboard

- **HR Dashboard:** A centralized interface for recruiters to create job postings, view applicant progress, and monitor recruitment stages. It provides role-based access and a user-friendly layout for efficient navigation.
- **Candidate Registration Module:** Allows candidates to register, log in, and manage their profile. Resume upload functionality feeds into the backend for future AI processing. [4-6]
- **Data Management Layer:** Stores job postings, resumes, test scores, and candidate progress in a structured SQL database, enabling secure and efficient data retrieval for Phase 2 operations.

2.2.Phase 2: Automated Recruitment Process

- Resume Parsing Engine: It extract relevant information from uploaded resumes and compare it against job requirements. Candidates that match are shortlisted automatically.
- Aptitude Test Generator: Automatically creates role-specific aptitude questions, delivers them to selected candidates, and scores them in real time.
- Communication and Notification Module: Sends automated emails at every stage (e.g., aptitude test link, GD invite, interview schedule) using integrated mailing APIs.
- Group Discussion Scheduler: Schedules virtual group discussions with embedded meeting links, based on test performance.
- Interview Automation: Coordinates interviews with selected candidates and HR, allocating slots and updating status in the system. [7-9]

3. Results and Discussion

3.1. HR Login

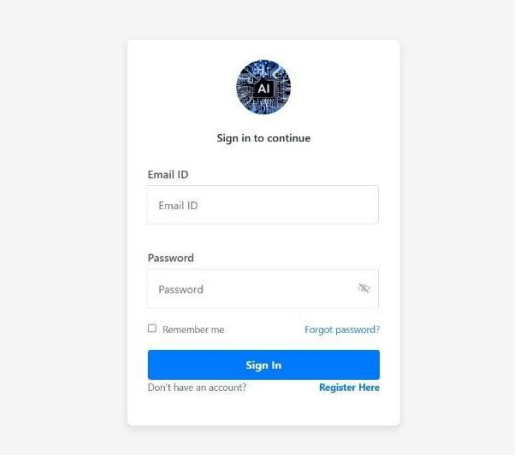

Figure 2 Sign in Page

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This interface allows HR personnel to securely log in to the AI-Powered Recruitment System. It includes fields for email ID and password, with options for remembering login credentials and recovering forgotten passwords. The "Register Here" link supports new HR account creation. This login module ensures authorized access and forms the gateway to the HR dashboard for job posting and candidate management. Figure 2 shows Sign in Page

3.2. HR Job Posting

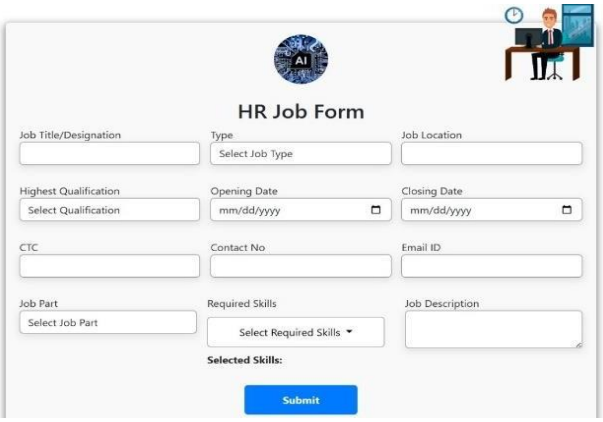

Figure 3 HR Form

This form enables HR personnel to create detailed job postings by entering key information such as job designation, type, location, required qualifications, opening and closing dates, CTC, contact details, required skills, and a full job description. It serves as the foundation for publishing openings on the platform and initiating the recruitment process. Figure 4 shows Request Form

3.3. Candidate Registration

Figure 4 Request Form

This form allows candidates to submit a request for empanelment by providing their personal and professional details. It acts as the first step in the recruitment process, enabling the system to capture essential candidate information for further evaluation and automated shortlisting. Figure 5 shows About Us Page

3.4. About Us Page

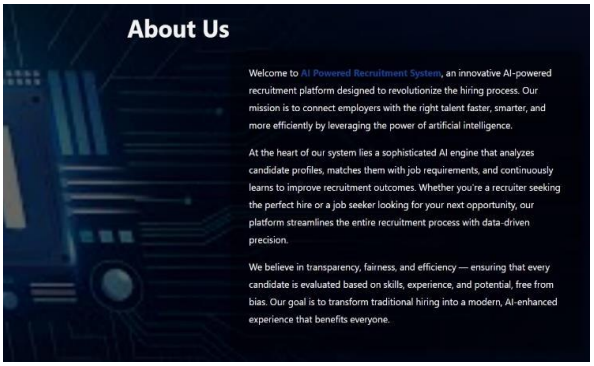

Figure 5 About Us Page

The About Us page provides an overview of the organization's vision, mission, and goals behind developing the AI-Powered Recruitment System. It introduces users to the platform's purpose, highlights its key features, and builds trust by sharing the motivation and values driving the recruitment solution. Figure 6 shows Benefits [10-12]

3.5. Benefits of AI-Powered Recruitment System

Figure 6 Benefits

This section highlights the key advantages of using the AI-Powered Recruitment System. It outlines

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benefits such as reduced hiring time, automated resume screening, unbiased candidate evaluation, improved decision-making, and enhanced recruiter efficiency. These benefits demonstrate how AI transforms traditional hiring into a faster, smarter, and more transparent process. Figure 7 shows Aptitude Test [13-15]

3.6. Aptitude Test Interface

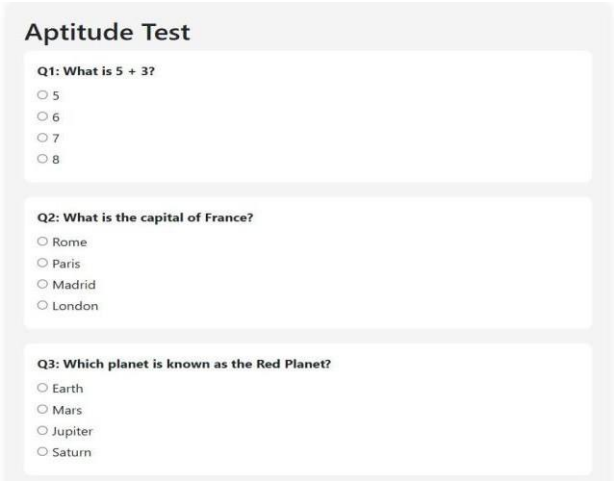

Figure 7 Aptitude Test

This interface presents the aptitude test administered to shortlisted candidates. The test includes multiple-choice questions to assess logical reasoning, problem-solving, and technical knowledge. Real-time evaluation and submission tracking enable efficient candidate assessment. Figure 8 shows Request to Implementation

3.7. Candidate Information

Figure 8 Request to Implementation

This section presents the candidate information displayed on the HR dashboard, which dynamically updates throughout the recruitment process. It reflects the current status of candidates as they progress through stages such as aptitude tests, group discussions, and interviews, automatically filtering and displaying only the selected candidates at each phase. This enables HR personnel to efficiently monitor and manage the recruitment workflow. Figure 9 shows Verification Mail

3.8. OTP Verification Email

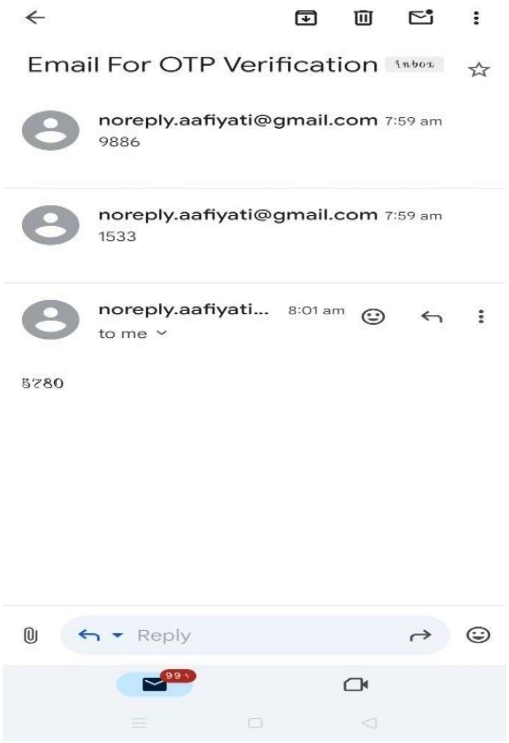

Figure 9 Verification Mail

This figure shows the email containing the One-Time Password (OTP) sent to candidates as part of the authentication process. OTP verification enhances security by ensuring that only verified users can access the system, thereby safeguarding candidate and recruiter information during registration and login. [16-18]

Conclusion

This paper presents an AI-Powered Recruitment System that addresses the inefficiencies of traditional hiring by automating processes from job posting to

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offer letter generation. The system is divided into two main phases: the first phase focuses on developing a frontend interface and HR dashboard for job management and candidate registration, while the second phase leverages AI to automate resume screening, aptitude test generation, group discussion scheduling, and final interview coordination. The platform also ensures real-time updates and transparency throughout the recruitment journey. By reducing manual HR workload and ensuring a structured, merit-based selection process, the system improves recruitment speed, consistency, and candidate experience. Moreover, the system's modular design allows for scalability and adaptability to diverse organizational needs. The integration of intelligent automation not only minimizes human bias but also enhances decision accuracy by relying on data-driven insights. This contributes to a more equitable and efficient recruitment process that benefits both recruiters and candidates. Future enhancements may include predictive analytics to anticipate candidate success and chatbot integration for enhanced candidate engagement and support, ultimately creating a more dynamic and responsive hiring pipeline. This AI- powered approach has the potential to transform recruitment workflows, setting a new standard for talent acquisition in the digital age.

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