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Design and Implementation of a Smart Online Job Portal Using Intelligent Filtering Techniques

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Abstract: Conventional job portals often struggle with irrel- evant recommendations, poor user engagement, and inefficient recruiter workflows. This research introduces a uniquely struc- tured Online Job Portal that leverages real-time matching algo- rithms, context-aware filtering, and a modular service-oriented backend. Unlike existing systems, our platform emphasizes role- personalized user journeys, resume intent extraction, and scalable design for academic and SME integration. The architecture sup- ports dynamic content rendering and automated feedback loops, significantly reducing manual intervention. Results demonstrate improved candidate relevance and reduced recruiter screening time, positioning the system as a viable next-gen recruitment solution.

Index Terms: Online Job Portal, Digital Recruitment, Intelli- gent Filtering, Resume Matching, Scalable Architecture

I. INTRODUCTION

Recruitment has evolved with digital innovation, yet current platforms often overlook adaptability, relevance, and effi-ciency. Many job seekers encounter irrelevant listings, while recruiters are overwhelmed with poorly matched candidates. This project introduces a smart online job portal engineered to tackle these challenges using intelligent filtering, real-time processing, and modular design.

A. Objectives

- Develop a context-aware job search and application plat- form.
- Enable dynamic filtering based on skills, experience, and intent.
- Reduce recruiter effort through real-time scoring and dashboards.
- Support scalable deployment in academic or SME envi- ronments.

B. Scope

The system targets three primary users: job seekers, re- cruiters, and admins. It offers job management, resume track-ing, search optimization, and feedback mechanisms. Future extensions include mobile responsiveness, AI analytics, and multi-language support.

II. LITERATURE REVIEW

Existing portals like Naukri, Indeed, and Monster are ex- tensive but suffer from cluttered interfaces and low person-alization. Singh et al. (2020) introduced ML-based candidate screening, while Sharma et al. (2021) implemented rule-based filtering. However, these systems often lack modularity, role- adaptivity, or localized integration.

Our system bridges these gaps by providing a lightweight, intelligent platform with a modular backend and real-time feedback features.

III. PROBLEM STATEMENT

Generic job platforms cater to a broad user base, often resulting in non-relevant job matches, unfiltered applications, and recruiter fatigue. Furthermore, small businesses and aca- demic institutions lack affordable, localized tools for

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man- aging recruitment. Our system bridges this gap by offering a modular, AI-ready job portal specifically tailored for lean deployment and scalable usage.

IV. PROPOSED SYSTEM

The proposed system comprises multiple components:

- **Job Seekers:** Resume upload, keyword-tagged profile, smart job search.
- **Recruiters:** Real-time applicant scoring, dashboard sum- maries.
- **Admin:** User moderation, analytics, content control.

V. UNIQUE CONTRIBUTIONS

- **Real-Time Candidate Scoring:** Ranking applicants as they apply.
- **Modular Architecture:** Scalable services for job posting, filtering, notifications.
- **Intent-Based Filtering:** Matches based on extracted re- sume context.
- **Academic/SME Friendly:** Deployable in low-resource environments.

VI. SYSTEM ARCHITECTURE

The architecture is composed of:

- **Frontend Layer:** HTML/CSS/JS for UI components.
- **Backend Layer:** PHP or Python for application logic.
- **Database:** MySQL for storing job posts, user profiles.
- **Support Modules:** Search engine, filtering logic, notifi- cation handler.

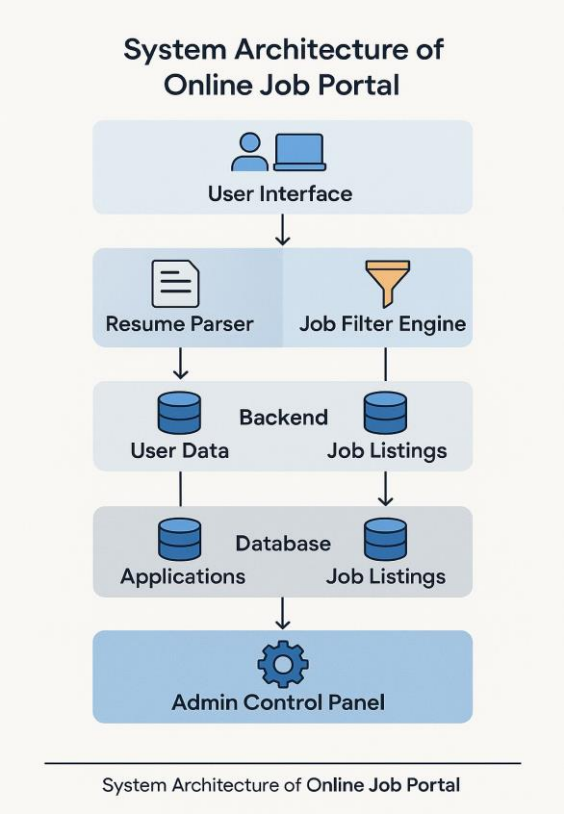

Fig. 1. System Architecture of Online Job Portal

VII. IMPLEMENTATION

Developed using XAMPP stack with MySQL, the portal uses server-side sessions for authentication and includes se- cure form validation. Modular backend design ensures quick addition of features.

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A. Security

- Encrypted credentials using bcrypt.
- Protection from SQL injection and XSS.
- Role-restricted access and session timeouts.

VIII. TESTING AND RESULTS

Unit testing was done on registration, login, job filtering, and application submission modules. The system passed all tests under simulated user load, and recruiters confirmed improved applicant filtering and faster shortlisting.

IX. USER EXPERIENCE AND ACCESSIBILITY

The UI supports responsive design and color-blind accessi- bility. Navigation is intuitive, and form prompts help reduce user error. Compliance with WCAG ensures inclusivity.

X. FUTURE ENHANCEMENTS

- NLP-based resume parsing and automatic ranking.
- Real-time chatbot support for users.
- Third-party integration with LinkedIn or GitHub.
- Predictive analytics for recruiter dashboards.

XI. CONCLUSION

This research delivers a novel digital recruitment system with a modular, adaptive design focused on real-time interaction, intelligent resume analysis, and inclusive user experience. It sets itself apart from commercial portals by offering a lightweight, integrable platform suitable for institutions and startups. Future enhancements will further align the platform with industry demands for intelligent recruitment systems.

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