



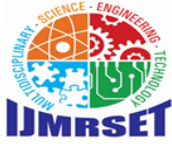
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Short-Term Job Finder System Using Skill-Based Matching

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ABSTRACT: Finding relevant short-term employment opportunities has become increasingly difficult due to the large number of job listings available on modern job platforms. Many existing systems rely on manual searching and basic keyword filtering, which often results in inefficient job discovery and irrelevant job recommendations. This paper presents a Short-Term Job Finder System with Skill-Based Matching designed to improve the efficiency of connecting employers and job seekers for short-term employment opportunities. The proposed system allows employers to create and manage job postings while enabling job seekers to search and apply for jobs based on their skill categories. The system is implemented as a web-based application using the Flask framework for backend development and PostgreSQL for database management. A skill-based matching mechanism filters job listings according to the user's selected skills, ensuring that relevant opportunities are displayed. The system also includes secure user authentication and job application management features. By improving job relevance and simplifying job discovery, the proposed system provides an efficient platform for short-term job recruitment.

KEYWORDS: Job Finder System, Skill-Based Matching, Short-Term Jobs, Flask Web Application, PostgreSQL Database.

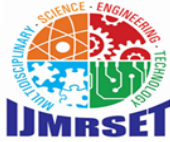
I. INTRODUCTION

In recent years, the demand for short-term employment opportunities has significantly increased due to the rise of flexible work environments and freelance-based job markets. Many individuals such as students, part-time workers, and freelancers actively seek short-term jobs that match their skills and availability. However, finding suitable short-term jobs remains a challenge because many existing job platforms focus mainly on full-time employment and often require users to manually search through a large number of job listings. This process can be time-consuming and inefficient for both job seekers and employers.

II. RELATED WORKS

Several research studies and job recruitment platforms have attempted to improve the process of job searching and recruitment through online systems. Many existing job portals such as LinkedIn, Indeed, and other recruitment platforms provide digital solutions that connect employers and job seekers. These systems allow users to search for job opportunities, upload resumes, and apply for available positions. However, most of these platforms primarily focus on full-time employment and large-scale recruitment processes rather than short-term job opportunities.

Previous research has explored different approaches to improve job matching systems. Some studies have proposed recommendation-based job matching systems that analyze user profiles, skills, and preferences to recommend suitable job opportunities. These systems aim to reduce the effort required by job seekers to manually search through large numbers of job listings. However, many recommendation systems require complex data processing techniques and large datasets, which may not be suitable for small-scale job platforms.



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Other research works have focused on developing web-based job portals that simplify job posting and recruitment processes. These systems typically include features such as user authentication, job posting, and job browsing. While these platforms improve accessibility, they often lack mechanisms that specifically address the needs of short-term job markets or skill-based job discovery.

In recent studies, skill-based matching has been identified as an effective approach for improving job recommendation systems. By analyzing the required skills for a job and comparing them with the skills of job seekers, the system can provide more relevant job opportunities to users. This approach improves the accuracy of job discovery and helps employers connect with candidates who possess the required abilities.

The proposed Smart Short-Term Job Finder System with Skill-Based Matching builds upon these concepts by providing a simplified web-based platform that focuses specifically on short-term employment opportunities. The system integrates skill-based filtering with an easy-to-use interface, enabling employers to post jobs efficiently and allowing job seekers to quickly discover relevant opportunities. This approach improves the job matching process and supports the growing demand for flexible short-term employment solutions.

III. PROPOSED SYSTEM

The proposed Skill-Based Job Finder System provides an efficient platform for connecting employers with job seekers for short-term employment opportunities.

The system supports two primary user roles: employers and job seekers. Employers can create job postings by providing details such as job title, category, location, salary, and job duration. These job postings are stored in the system database.

Job seekers can register on the platform and search for available jobs. The system filters job listings based on the selected skill category and displays relevant opportunities.

The proposed system improves job discovery by reducing irrelevant listings and ensuring that job seekers receive opportunities aligned with their skills and interests.

IV. SYSTEM ARCHITECTURE

The proposed system follows a three-layer architecture consisting of the Client Layer, Application and Processing Layer, and Data Storage Layer. The Client Layer provides the user interface through which employers and job seekers interact with the system. Job seekers can search and apply for jobs, while employers can post and manage job listings. The Application and Processing Layer is implemented using the Flask framework. This layer handles user authentication, job creation, job listing retrieval, and job application management. The Data Storage Layer uses a PostgreSQL database to store system data, including user accounts, job postings, and job applications. Fig. 1 depicts the system architecture.

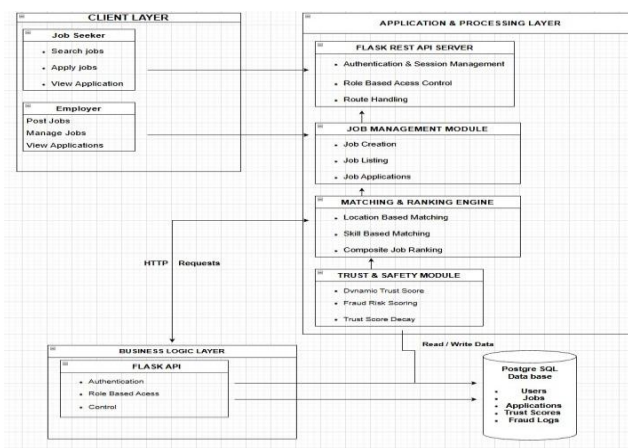


Fig. 1. System Architecture Diagram



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V. IMPLEMENTATION DETAILS

The system is implemented as a web-based application using Python and the Flask framework. The user interface is developed using HTML and CSS, providing a simple and user-friendly interface. Employers can create job postings through a structured job creation form. The submitted information is stored in the PostgreSQL database and made available to job seekers.

Job seekers can view job listings and apply for jobs through the discovery interface. The system retrieves relevant job postings based on skill categories selected by the user.

The major implementation components are summarized below:

- Python 3.x – Used for backend system development and processing logic.
- Flask Framework – Used to develop the web interface and handle user requests and job listings.
- HTML & CSS – Used for front-end structure and styling of web pages.
- JavaScript – Used for client-side interactions and dynamic content.
- PostgreSQL Database – Used to store user information, job records, and application history.

TABLE I

Technologies Used in the System

S.No	Technology	Purpose
1	Python	Backend programming language
2	Flask	Web framework
3	HTML	Structure of web pages
4	CSS	Styling and UI design
5	JavaScript	Client-side interactions
6	PostgreSQL	Database for users and jobs

TABLE II

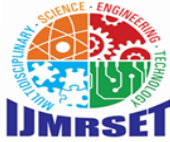
System Modules

Module	Description
Module 1	User Authentication and Account Management
Module 2	Employer Job Creation and Job Management
Module 3	Job Seeker Job Discovery and Skill-Based Matching
Module 4	Job Ranking and Reliability Analysis

TABLE III

System Functionalities

Feature	Description
User Registration	Allows employers and job seekers to create accounts
Login System	Secure login using email and password



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Job Posting	Employers can create and manage job postings
Job Browsing	Job seekers can view available jobs
Skill-Based Matching	Jobs filtered based on required skills
Job Ranking	Jobs ranked by reliability and relevance

VI. RESULTS AND DISCUSSION

This section presents the results obtained from the proposed Short-Term Job Finder System. The system was tested to evaluate its functionality, usability, and job matching performance.

The system successfully demonstrates the functionality of a skill-based job matching platform. Employers can easily post job opportunities and manage their listings through the employer dashboard. Job seekers can efficiently discover relevant job opportunities through skill-based filtering. The platform ensures that users receive job listings that match their skills and preferences.

A. Login Interface

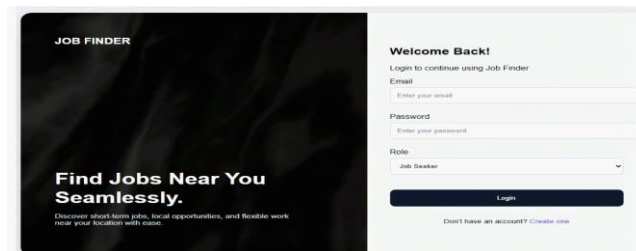


Fig. 2. Login Page Screenshot

B. Job Creation Interface



Fig. 3. Create a Job Form Screenshot

C. Employer Dashboard

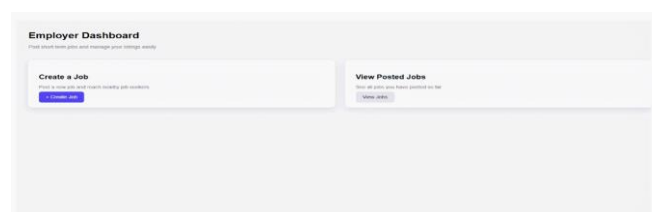
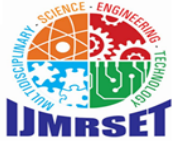


Fig. 4. Employer Dashboard Screenshot



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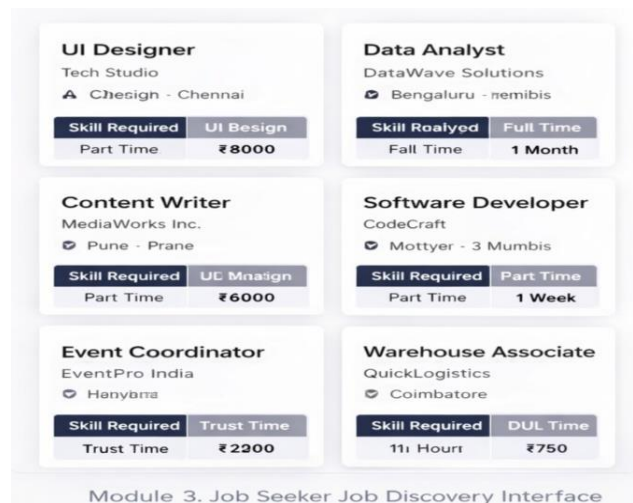
D. Job Seeker Discovery Interface



Fig 4. Trust Score and Job Ranking Interface

Fig. 5. Job Seeker Discovery Interface

E. Trust Score and Job Ranking



Module 3. Job Seeker Job Discovery Interface

Fig. 6. Trust Score and Job Ranking Interface

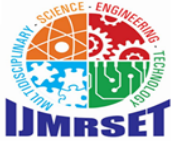
VII. COMPARATIVE ANALYSIS

Table IV compares traditional job search methods with the proposed system. Traditional portals rely on manual keyword searching without skill-based filtering, leading to low matching efficiency. The proposed system addresses these limitations through automated skill-based matching.

TABLE IV

Comparison of Job Search Approaches

Feature	Traditional	Proposed System
Job Search	Manual	Skill-Based Filtering
Job Matching	Limited	Improved
Job Posting	Available	Available
Short-Term Jobs	Limited	Supported
	Low	High



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Future improvements can enhance the system by integrating advanced job recommendation algorithms and machine learning-based ranking systems to further improve job matching accuracy.

The platform can also be extended to support mobile applications, allowing users to search and apply for jobs through smartphones. Additional features such as employer rating systems, automated fraud detection, real-time notifications, and expanded skill category options can further improve the usability and reliability of the system.

VIII. SECURITY ANALYSIS

Security and reliability are important aspects of the proposed Job Finder System. The system ensures safe handling of user data and reliable job matching through several mechanisms.

- User Authentication: Only authorized users can access the system and manage job listings.
- Role-Based Access Control: Separate access levels are maintained for employers and job seekers.
- Secure Data Storage: User details and job records are stored securely in the PostgreSQL database.
- Session Management: Secure session handling prevents unauthorized access to user accounts.
- Input Validation: The system validates all user inputs to prevent invalid data submissions.

These mechanisms improve the reliability and security of the system for job recruitment application

IX. CONCLUSION

This research presented a web-based Short-Term Job Finder System with Skill-Based Matching designed to improve the efficiency of connecting employers and job seekers for short-term employment opportunities.

The proposed system allows employers to easily post and manage job listings while enabling job seekers to discover relevant opportunities through skill-based filtering. The implementation using Python, Flask, and PostgreSQL provides a lightweight and scalable system architecture.

Overall, the proposed system enhances the short-term job recruitment process and simplifies job discovery for both employers and job seekers, addressing the growing demand for flexible employment solutions.

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