MSW MANAGEMENT -Multidisciplinary, Scientific Work and Management Journal
ISSN: 1053-7899
Vol. 36 Issue 1s, 2026, Pages: 3408-3412

SKILLMATCHER PRO:AI-POWERED PLACEMENT SYSTEM

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Abstract
Designed to modernize and streamline the campus recruitment process, the clever web-based tool Ai-Powered Placement System is driven by By automating important tasks including resume parsing, skill extracting, and assessment tracking, it closes the distance between graduates and companies. This system's main objective is to match students with the most appropriate employment possibilities depending on their academic background and skill set thereby raising their chances of choice. This system provides special modules for teachers as well as for students. Using integrated Google Forms, students can apply for jobs, check corporate ads posted by teachers, submit their resumes, extract their skills using artificial intelligence, and view their results. Conversely, teachers may quickly manage firm listings, monitor assessment scores, record student job applications, and upload corporate data.The way this solution integrates machine learning methods for skill matching and resume processing is really noteworthy. Examining the contents of a student's résumé, the system automatically finds pertinent soft and technical abilities and matches them with corporate needs that the teacher has uploaded. Based on this comparison, the system lets students take tests fit for their employment role and suggests corresponding businesses.Modern web development technologies—HTML, CSS, JavaScript for the frontend, Python Flask for the backend—have been used to build the platform. For intelligent skill extraction and automated assessments, it also includes AI-based elements. Technical and non-technical people can use this scalable, safe, user-friendly system made possible by the mix of technologies. The initiative has the future to develop into a more sophisticated platform comprising recruiter logins, interview scheduling, chatbots for help, and data-driven analytics dashboards. Skill Matcher Pro is therefore not only a placement tool but also a whole, AI-powered solution for raising student employability and streamlining hiring procedures in educational institutions.
Keywords—Artificial Intelligence, Skill Matching, Machine Learning, Campus Recruitment Automation,Skill-Based Job Recommendation, Student Portal, Teacher Dashboard, Resume Skill Extraction.

I. INTRODUCTION

These days, technology is quite important for improving job and educational systems. The digitalization of student placement operations marks one of the most important changes occurring in educational institutions nowadays. Finding the appropriate prospects is challenging for students using conventional placement methods since they usually entail manual procedures, delayed communication, and a lack of individualized job matching. Developed to circumvent these constraints by using artificial intelligence (AI) and web technologies to simplify the whole placement process for professors and students, the Skill Matcher Pro project aims to This web-based tool is meant to connect job needs uploaded by teachers or recruiters with student competencies. It lets students post their resumes, from which artificial intelligence picks their soft and technical abilities. This drives the system to recommend pertinent businesses and let students complete AI-powered tests to gauge their preparedness. Teachers may utilize an interactive and easy interface to upload company information, track student development, and review performance reports.This study aims to close the difference between academic readiness and actual employment requirements. Skill Matcher Pro helps students to find their talents and apply for jobs that fit them best by automating important placement chores including resume analysis, skill matching, and application tracking. Apart from streamlining the placement process, this creative solution helps to increase job-readiness and a more effective campus recruiting scene.

II. LITERATURE REVIEW

Twinkle Panchal , Mayuresh Wadke , Prof. Aishwarya Sedamkar [3] This article explored that the Placement is the critical part of any education association in which maximum work till now is being accomplished manually. This system is designed to reduce manual work as much as possible while ensuring high levels of optimization, simplicity, and security. It's a web-based platform that supports both students and administrative staff in managing every task related to placements efficiently. The design is a web operation that can be penetrated and successfully used throughout association with applicable login enabled. Students will be able to upload their personal and academic details through their resumes. One of the key features of this system is that it allows one-time registration. The Placement Management System has been developed using HTML, CSS, and JavaScript for the frontend, and PHP with MySQL for the backend.

Sampada Kayat, Archit Gupta, Badrinath Sabban, Raviraj Nagarkar [4] This paper explored The Placement Management System (PMS) is a comprehensive software solution designed to streamline and optimize the process of managing placements institutions within educational and organizations. PMS offers a centralized platform that facilitates the entire placement lifecycle, from employer registration and job posting to candidate application and selection. The system includes features that cater to the needs of both employers and students. Employers can create their accounts, post job openings, manage the applications they receive, and schedule interviews smoothly. On the other hand, students can create profiles, explore job opportunities, apply for positions, and track their application status in real-time. The system uses intelligent matching algorithms to link students with the most suitable job roles based on their skills, qualifications, and preferences. It also offers tools for data analysis and reporting, helping stakeholders understand placement trends, performance indicators, and generate useful reports for better decision-making. With an easy-to-use design, solid features, and room for growth, the Placement Management System makes the whole process of placements faster, more efficient, and less stressful for everyone involved.

Alfiya Banu, Dr. Manju Bargavi S. K [6] This project aims to build a web-based application tailored for the placement department of a college. It runs on a Windows platform and helps maintain a database of student information that companies can access if they have authorized login credentials. The system keeps all relevant student data, including their personal and technical details, which are essential for generating resumes

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to be shared with recruiters. Colleges can use this system to effectively manage and maintain student records for placement purposesand Students should be able to log in to their accounts and upload their work.

Aditya Wandile, Deepak Agashe, Mehul Chaodhari, Abhishek Yadav, Prof. Komal Jaisinghani.[8] This paper described the design and development of a College Placement Management System (CPMS), a transformative platform that ushers in a new era of streamlined and efficient campus recruitment.

The CPMS addresses the common challenges found in traditional, manual placement methods, which are often slow, inconsistent, and prone to communication gaps. By leveraging a modern technology stack, the system fosters a usercentric environment that empowers students, placement administrators, and companies to seamlessly navigate the placement journey, from initial registration to successful job placement. The robust backend, powered by NodeJS, handles complex data processing and business logic. Students can effortlessly manage their profiles, submit applications, schedule interviews, and track job offers. Placement administrators benefit from a centralized platform where they can manage company information, communicate efficiently with recruiters, post job openings easily, and track placement statistics for better insights. Companies, through an optional secure interface, can efficiently post jobs, access student profiles that match their requirements, and manage the recruitment process with greater transparency and ease. In the end, CPMS simplifies day-to-day tasks, promotes clear communication, and brings greater transparency for everyone involved, creating a smoother and more effective campus recruitment experience.

Mr. Ajinkya Farkade, Mr. Akshay Rathod, Mr. Vishal Cheke, Mr. Adesh Bhondave, Prof. Ashwini Pawale [2] This system examined the traditional training and placement management process, serving as an application for Training Placement Officers in colleges. It provides an easy-to-use portal that helps manage student information efficiently during placements. Students can post queries, update personal and educational details, upload resumes, and access placement preparation materials via a dedicated login. The system incorporates a Company Tab, assisting companies in shortlisting eligible students, reducing manual work, and minimizing paperwork. The front end is built using CSS, Bootstrap, and HTML, while the backend uses PHP, Android, and XML technologies. Database management is handled by MYSQL. This online system automates Training and Placement Cell activities, fostering better coordination and utilizing collective intelligence to enhance the selection ratio. It focuses on authorizing CVs, communicating job openings, managing corporate relationships, monitoring selection progress, and facilitating seamless information creation.

III. METHODOLOGY

- **Requirement Gathering**
  - Understand user roles (student, teacher, recruiter) and their functional needs.
  - Identify essential data points (skills, job roles, resume formats, etc.).
- **System Design**
  - Design the overall architecture including frontend, backend, and database.
  - Create UI wireframes for all dashboards and pages.
- **Development**
  - Use Flask for backend API and logic.
  - HTML/CSS/JavaScript for frontend interface.
  - Integrate NLP libraries (like spaCy) for skill extraction.
  - Use MySQL or MongoDB for storing user and job data.
- **Testing**
  - Perform unit testing, integration testing, and user testing to ensure functionality and usability.
- **Deployment**
  - Host the web application on a cloud server (like Heroku or AWS).
  - Ensure SSL and secure login features are in place.
- **Feedback & Enhancement**
  - Collect feedback from users and enhance the system with additional features such as analytics or interview scheduling.

IV. OVERVIEW OF PROPOSED WORK

Designed to update and automate the conventional placement procedure used in educational institutions, the suggested solution, Skill Matcher Pro: Ai-Powered Placing solution, It matches talents from student resumes with suitable career jobs using sophisticated technologies including artificial intelligence (AI), natural language processing (NLP), and web development frameworks. This guarantees that students are matched with employment that really fit their skill sets and helps to minimize the manual efforts by placement officials.

Students uploading their resumes through the web site starts the basic functionality. The system extract technical and soft abilities from the resume material using NLP approaches. These acquired abilities are kept and matched with criteria put forth by companies or educators. This comparison lets the system cleverly recommend appropriate businesses to the learner. By emphasizing skills instead of merely academic performance, this guarantees fairness in addition to improving placement accuracy.

This platform provides role-based access

- Students can apply for jobs, view matching employers, upload resumes, and take tests.
- Teachers can control student activities, track assessment development, and enter company data.
- Recruiters analyze matching student profiles and publish job openings.

Core Features

- AI-Based Resume Parsing: From uploaded resumes, automatically picks skills, education, and experience.
- Based on extracted talents and job role criteria, skill-to---job matching pairs students with appropriate firms.
- View jobs, upload resumes; dedicated interfaces for teachers (track development), students (view jobs), and recruiters (post positions, view matching applicants).
- Students can complete skill-based tests that hone employment suggestions even more.
- Students that use job application tracking can apply for positions and monitor application status.
- Teachers can track student involvement and post company information under administrative control.

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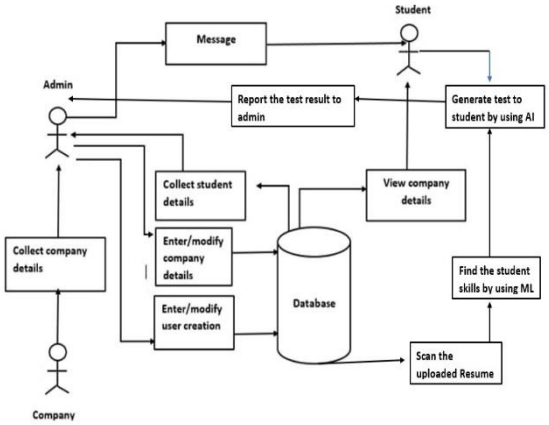
V.PROPOSED ARCHITECTURE DIAGRAM



VI. SNAPSHOTS

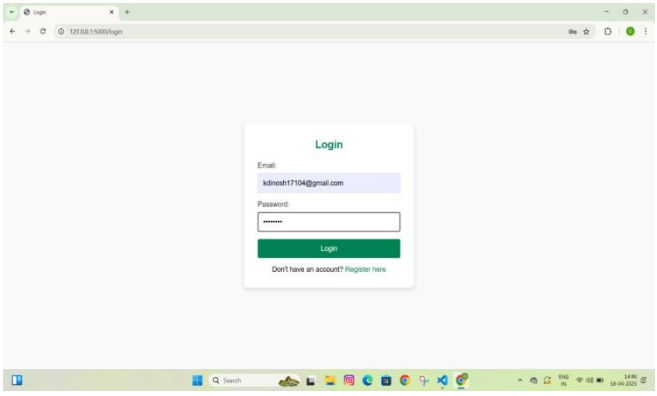


Figure: Log in page

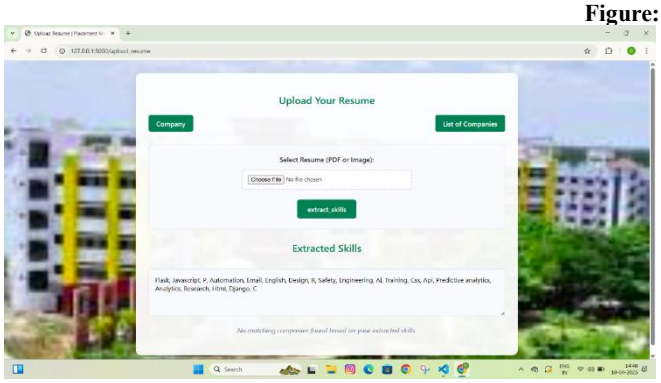


Figure: Upload resume (skill extraction)

Figure : Matching companies

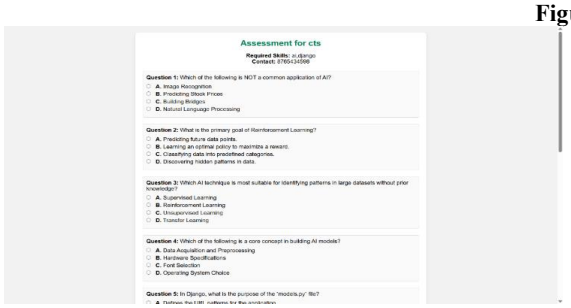


Figure : Assessment for companies

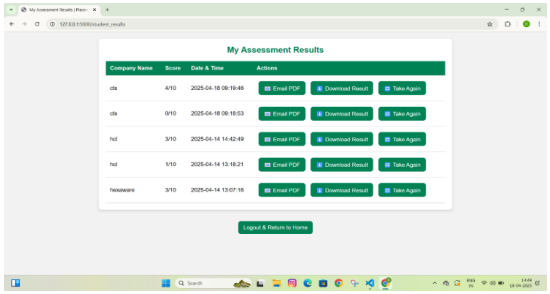


Figure : My assessment results

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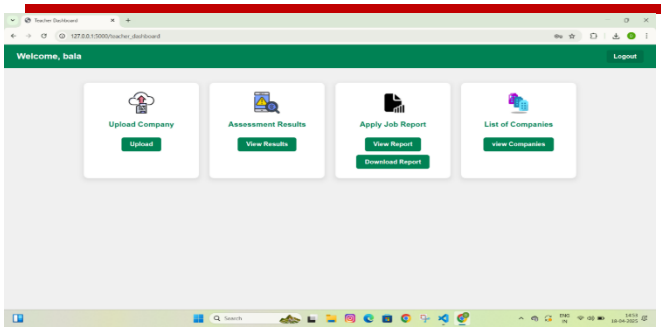

Figure : Admin controls

Assessment Results

Student Name	Company Name	Score	Date & Time
dinesh	cts	4/10	2025-04-18 09:19:46
dinesh	cts	0/10	2025-04-18 09:18:53
dinesh	hcl	3/10	2025-04-14 14:42:49
dinesh	hcl	1/10	2025-04-14 13:18:21
dinesh	hexaware	3/10	2025-04-14 13:07:16
pappu	tcs	5/10	2025-04-11 12:17:13
pappu	tcs	3/10	2025-04-11 12:15:38
puppy	tcs	1/10	2025-04-10 19:17:38
puppy	tcs	2/10	2025-04-10 19:15:24
puppy	cts	1/10	2025-04-10 18:55:13
puppy	cts	3/10	2025-04-10 18:54:09
puppy	cts	3/10	2025-04-10 18:54:04
yogi	tcs	2/10	2025-04-09 17:15:29

Student Application Report

Student Name	Email	Company Name	Assessment Taken	Score
karnesh	karaneeshs18@gmail.com	tcs1	No	N/A
hareesraj	hareesraj25@gmail.com	tcs1	No	N/A
nithya	nithi@gmail.com	tcs1	No	N/A
yogi	yogi@gmail.com	tcs1	No	N/A
babasai	babasai@gmail.com	tcs1	No	N/A
puppy	puppy@gmail.com	tcs1	No	N/A
pappu	pappu@gmail.com	tcs1	No	N/A
pravin	pravinmurugan2004@gmail.com	tcs1	No	N/A

Figure : Student application and assessment report

VII. CONCLUSION

Through automation of skill extraction, job matching, and assessment result tracking, the Ai-Powered Placement System has effectively streamlined the placement process. For both candidates and students, the technology simplifies the processes and effectively links them with pertinent employment prospects. The platform improves the placement process by matching candidates with businesses using machine learning to examine resumes, therefore increasing efficiency and user-friendliness.

Looking forward, various sectors need work and growth. The creation of a mobile app to enable users to maintain their profiles, evaluations, and job applications on the move and boost access would be among the main improvements. Furthermore, enhancing the AI models to include more complicated data and elements would help to guarantee a more customized placement experience for students and help to further optimize job matching.

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MSW MANAGEMENT -Multidisciplinary, Scientific Work and Management Journal
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