



(REVIEW ARTICLE)

Recruitmate: The ultimate placement cell solution

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Abstract

Recruit Mate – The ultimate placement cell solution is a web and mobile based application in which is designed to streamline and automate the recruitment process in educational institutions. This system helps in making the placement process smooth and in more efficient manner. Recruit Mate aims to help the Training and Placement Officers (TPO) by integrating some features like real time notifications, Resume Management, Student categorization based on eligibility criteria, and also to provide seamless communication between the students and recruiters. Recruit Mate simplifies placement coordination process and reduces manual efforts and ensure a good placement procedure. It will help in eliminating the traditional methods of placement by providing a digital platform that contains job postings, scheduling of recruitment drives, and structured analysis and many more that is related to the placement process. Recruit Mate also offers a dashboard in the application which will help in reducing the dependency on paper work and human intervention. This paper will discuss the system architecture, its functionalities and the methodology and also its impact on the modern educational placement processes.

Keywords: Profile Management; Role-Based Access Control; Seamless Integration; Recruit Mate

1. Introduction

From very long-time educational institutions all of them follow the traditional placement process which usually involves manual paperwork, inefficient tracking of the systems and major communication gaps between the students, faculty, training placement officer and the recruiters also. All of these challenges mostly lead to delays, lack of transparency, and also lead to major administrative burdens such as management of student data, job postings and recruitment drives. In order to address all these inefficiencies, Recruit Mate is introduced as a centralized, automated platform that streamlines the processes of student profile management, eligibility tracking for specific roles, interview scheduling, and recruiter- student interactions. Designed as a web and mobile application, Recruit Mate enhances the placement experience by ensuring real-time updates, structured workflows, and improved accessibility for all the stakeholders.

By taking the leverage of using a robust technological stack, Recruit Mate offers secure data management (students, recruiters), automate the communication process, manage placement analytics, by enabling the institutions to track student progress, optimize the recruitment workflows, hence improving the hiring efficiency in the educational institution. This platform provides a data -driven approach to placements, providing valuable insights about student employability and recruiter preferences. This paper explores the technological architecture, development approach, and key benefits of Recruit Mate, demonstrating how it enhances efficiency, transparency, and outcomes in campus recruitment.

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2. Literature survey

The integration of technology into recruitment processes has revolutionized campus hiring. Kadu et al. [1] developed a Smart College Campus Recruitment System, emphasizing the need for efficient and streamlined recruitment processes within educational institutions. Dubey and Narang [2] proposed a machine learning model for online campus recruitment, highlighting the role of predictive analytics in enhancing candidate selection. Thirumoorthy and Muneeswaran [3] applied text mining techniques to student recruitment systems, showcasing the potential of data-driven approaches in identifying suitable candidates. Velaga et al. [4] introduced an Automatic HR Recruitment System utilizing a multi-stage evaluation approach, demonstrating improved accuracy and efficiency in candidate assessment. Sharma et al. [5] presented an automated application processing system, addressing challenges in interview scheduling and panel creation through algorithmic solutions. Buckley et al. [6] conducted a case study on automated employment recruiting systems, revealing significant cost savings and increased hiring efficiency. Hooper et al. [7] explored the use of expert systems in personnel selection, underscoring the benefits of AI-driven decision-making in recruitment. Islam et al. [8] examined AI adoption in recruitment within Bangladesh, highlighting the transformative impact of technology on human resource practices. Hunkenschroer and Luetge [9] discussed the ethical considerations of AI-enabled recruiting, emphasizing the importance of fairness and transparency in automated systems. Várallyai [10] provided a comprehensive literature review on AI's impact on recruitment, outlining the advancements and challenges in implementing intelligent hiring solutions.

2.1. Problem identification

Campus Recruitment process in the educational institutions face several challenges that impact both students and Training & Placement Officers {TPOs}. Traditional process is where the placement processes are manually managed, which results in data disorganization, miscommunication, and several delays in key placement activities. Usually, TPOs struggle to sort the eligible candidates, to maintain accurate academic records, schedule drives, and to update students on the real-time changes. Sometimes this leads to missed opportunities for the deserving students. On the student's side, the absence of a centralized system will lead to confusion about the drive announcements, difficulties in tracking down the application statuses, and also inconsistent resume formats, all of these will ultimately affect their placement readiness.

Furthermore, educational institutions lack a unified platform which categorizes the students based on the company-specific criteria such as CGPA, backlogs, skills and also making eligibility checks tedious and error prone. By integrating features like automated student filtering, real-time notifications, resume generation, and performance dashboards, Recruit Mate manage placements seamlessly and ensures students stay informed and better prepared for career opportunities.

3. Methodology

The development of Recruit Mate was done using an agile methodology to iteratively build and enhance a web and mobile application which is aimed at automating campus recruitment workflows. The frontend makes use of React Native for cross-platform development, ensuring a seamless user experience across devices, with Visual Studio Code as the primary IDE. TypeScript ensures type safety, reducing runtime errors and improving maintainability. Tailwind CSS is included to deliver a proper, responsive UI through utility-first styling.

Firebase and Fire store are used in the back end to provide real-time database synchronization, user authentication, and secure data handling. Express.js works as the middleware API layer, by managing data transfer between frontend and backend, while Drizzle ORM interacts with a PostgreSQL database, to maintain data management and scalability.

Requirement analysis involves surveys with students and TPOs to identify crucial needs such as drive scheduling, resume auto-generation, performance dashboards, and CGPA-based filtering. Recruit Mate uses React Hooks like use State and use Effect for managing component state and lifecycle events, while real-time features are handled via Firebase listeners. Role-based access control (RBAC), encrypted storage, and Firebase authentication ensures safety. Testing was done using unit, integration, and user acceptance levels to check reliability and user experience. CI/CD [Continuous Integration/Continuous Development] pipelines are integrated for seamless deployments and version control.

4. Implementation

The Implementation of Recruit Mate focuses on delivering a seamless and structured placement management experience for students, Training & Placement Officers (TPOs), and recruiters. The system is designed to automate and optimize important processes such as user registration, drive scheduling, student filtering based on eligibility, and resume generation. Each module plays a vital role in ensuring that students are well- informed and prepared, while TPOs can efficiently manage placement workflows and monitor performance in real time.

The following sections provide an overview of the key features implemented within the platform, demonstrating how Recruit Mate provides an automated and seamless platform for the placement activities.

4.1. Login Page

The login page allows students,recruiters and TPOs to login into their respective modules. Users can enter their Email, Password and select their module and login into the application.

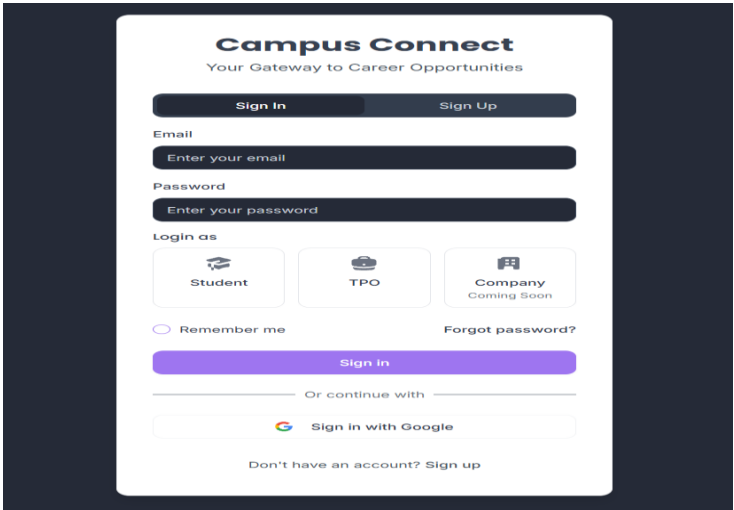


Figure 1 Login Page

4.2. Block Diagram

This diagram will give an outline of the flow of the Recruit Mate application.

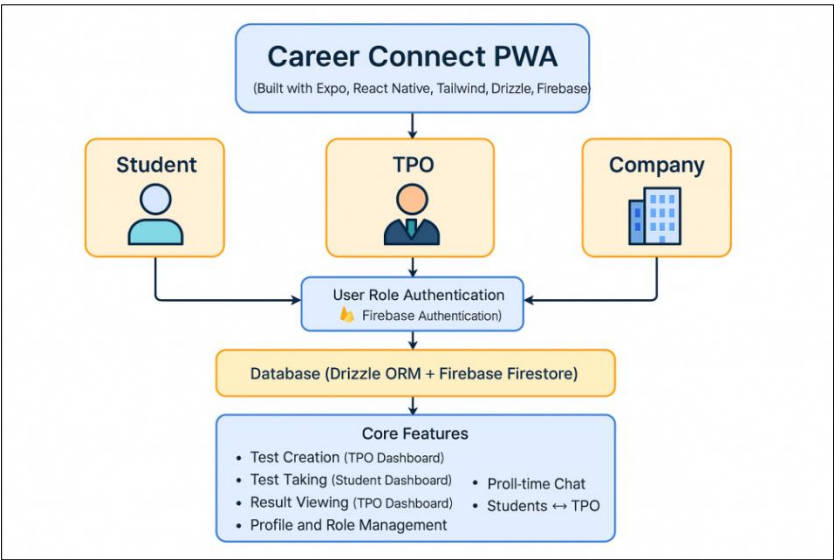


Figure 2 Block Diagram

4.3. Dashboard

The Dashboard provides a quick review of all the contents present in the application. The dashboard changes for all the modules depending on the access rights they hold.

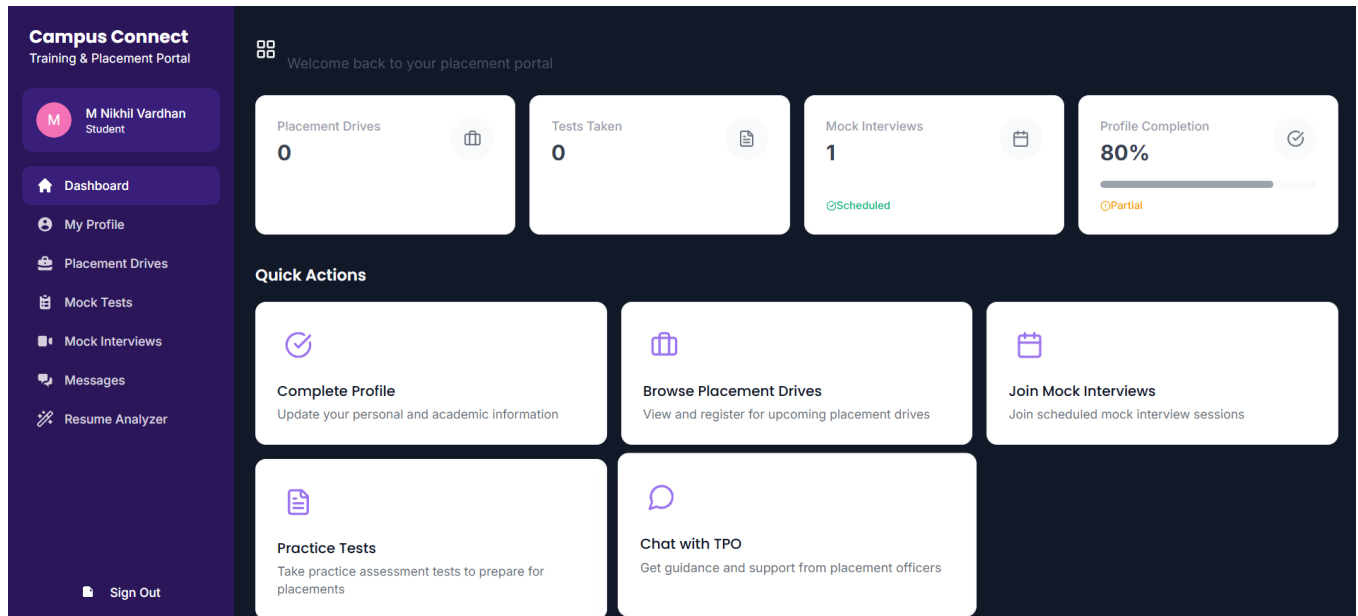


Figure 3 Dashboard

4.4. Personal Information

This page provides all the details about the student

4.5. Create Drive

This module within Recruit Mate provides the TPO/Admin with a feature to create the drive.

Create Placement Drive

Add details for a new placement drive. Fill out all required fields.

Company Name*

Company Logo URL
Optional: URL to company logo

Job Role*

Location*

Salary Package
Optional: Provide salary range or package details

Requirements*
Eligibility criteria for students

Figure 4 Create/Schedule Drive

4.6. Mock Test Section

This section allows students to practice mock test whenever there is a new job opening into the Recruit Mate platform.

Test Results

Sample Test - Results from student submissions

Student	Score	Percentage	Time Spent	Submitted
M Nikhil Vardhan	1 / 1	100%	0m 8s	Invalid Date
Samhitha	1 / 1	100%	0m 6s	Invalid Date
Samhitha	1 / 1	100%	0m 16s	Invalid Date
M Nikhil Vardhan	1 / 1	100%	0m 6s	Invalid Date
M Nikhil Vardhan	1 / 1	100%	0m 5s	Invalid Date
M Nikhil Vardhan	1 / 1	100%	0m 6s	Invalid Date

Test Summary

Average Score

100%

Highest Score

100%

Average Time

0m

Close

Figure 5 Schedule Mock Test

4.7. Company/Job Listings

His screen displays a detailed Job Profile along with the corresponding Company Profile for a placement opportunity.

- Job Profile includes role details such as Designation, Description, Eligibility Criteria (12th %, GPA), Seats, and Salary.
- Company Profile shows the recruiter’s Name, Address, Website, Contact, and Email.

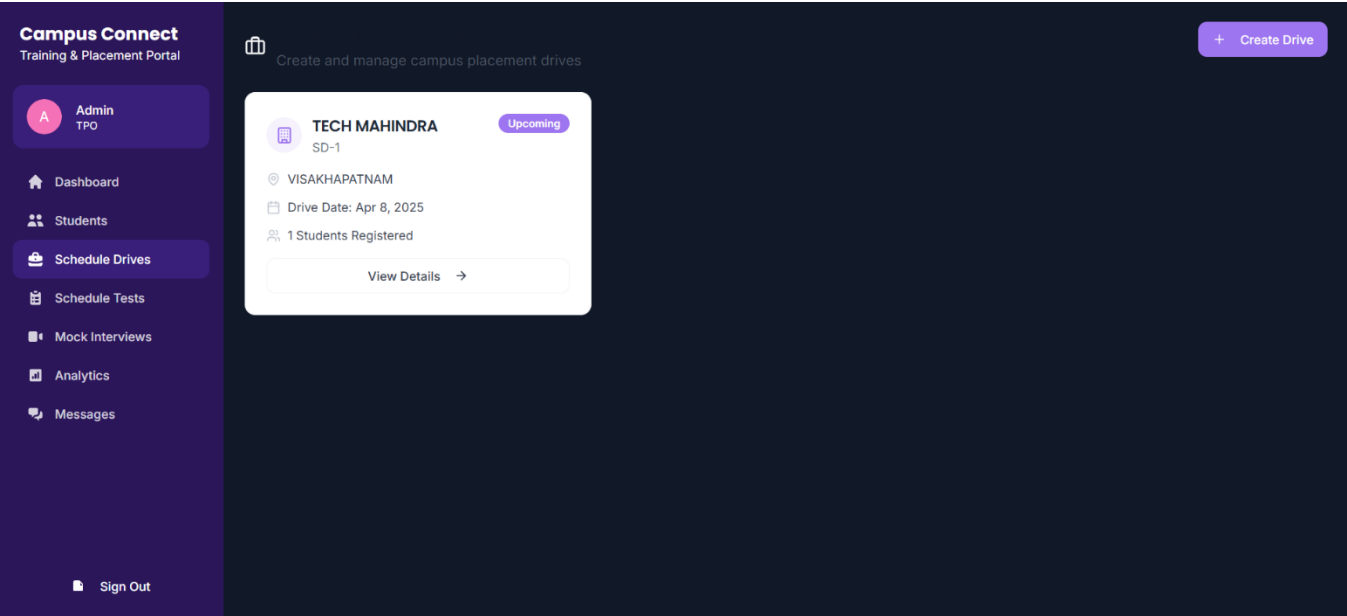


Figure 6 Job Dashboard

5. Conclusion

The Recruit Mate platform efficiently bridges the gap between students and recruiters through real- time placement features. By reducing manual effort, it ensures proper eligibility checks and centralized student data for Training and Placement Officers [TPOs]. The integration of scheduling, notifications, and performance tracking streamlines recruitment workflows. Through its digital-first approach, Recruit Mate empowers educational institutions with a proper system that enhances placement visibility, improves student opportunities, and ensures a smoother, data-driven recruitment process for long-term institutional success.

5.1. Future scope

These eventual updates when further updated in Recruit Mate has huge potential for growth in the future, including:

- AI-Based Candidate Matching: Implementing machine learning algorithms to match students with suitable job roles based on skills, academics, and interests.
- Blockchain for Offer Verification: Leveraging blockchain technology to ensure secure, cross-proof records of job offers and placement history.
- Automated Resume Insights: Using AI tools to analyze resumes and provide improvement suggestions, increasing student success rates.
- Integration with National Job Portals: Connecting with platforms like NCS and private job boards to expand placement opportunities beyond campus drives.

These future updates will further establish Recruit Mate as a revolutionary solution in the ed-tech and placement ecosystem, driving digital transformation in recruitment processes.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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