

College Placement System

¹Omraj Ubale, ²Chaitrali Dhiwar, ³Sakshi Kharat, ⁴Mrunali Nangare, ⁵Prof. Priya Borkar, ⁶Prof. Nita Pawar

^{1,2,3,4}Student, Ajeenkya D. Y. Patil School of Engineering, Computer Engineering Diploma, Charholi, Pune, India

⁵Professor, Ajeenkya D. Y. Patil School of Engineering, Computer Engineering Diploma, Charholi, Pune, India

⁶Professor, HOD, Ajeenkya D. Y. Patil School of Engineering, Computer Engineering Diploma, Charholi, Pune, India

Abstract - The proposed College Placement System has been conceived as a comprehensive technological intervention designed to streamline, automate, and centralize the myriad processes involved in the campus placement lifecycle, a domain traditionally fraught with inefficiencies arising from manually maintained records and fragmented communications across stakeholders. By systematically digitizing student registrations, company job postings, application tracking and status communications, the system aspires to bring unprecedented transparency, accessibility, and reliability to placement activities in higher education environments. Constructed using the Django web framework and designed to support modular extension, this system integrates multiple user roles including students, placement cell administrators, and institutional management permitting each to access role-appropriate resources, analytics dashboards, and document management modules. Special emphasis has been placed on data security, audit ability, and responsiveness of the application, thereby ensuring that critical placement events and deadlines are consistently met, institutional reporting standards are upheld, and student outcomes are improved as a consequence of enhanced preparedness and real-time access to career opportunities. The end product, in facilitating seamless interactions between students and recruiters, and providing actionable insight to administrators, sets a benchmark for the digital transformation of academic placement ecosystems while also laying the groundwork for future integrations involving AI-based eligibility screening, document verification, and predictive analytics in student recruitment.

Keywords: College Placement, Placement Portal, Student Registration, Django, Application Tracking, Resume Upload, Company Profile, Eligibility Filtering, Automated Shortlisting, Career Management, Machine Learning Integration, SVM, Data Analytics, Web-Based System, Recruitment Automation.

I. INTRODUCTION

The contemporary landscape of campus placements in Indian engineering and professional colleges is characterized by growing student enrollments, a proliferation of academic programs, escalating expectations from recruiters for finely filtered, job-specific applicant pools, and an institutional drive for higher placement percentages to enhance rankings and reputation. Within this scenario, the responsibility of managing the placement process falls to placement cells whose traditional reliance on manual forms, physical notice boards, email-based communication chains, and ad hoc spreadsheets is increasingly proving unsustainable. The tangible consequences of such legacy operations manifest in delays in application vetting, communication failures that affect timely dissemination of information, discrepancy in shortlisting, inadvertent exclusion of eligible candidates, and an overall lack of transparency in offer and application status reporting. The need for a robust digital solution thus emerges organically from repeated process audits, feedback from all stakeholder groups—including students, recruiters, academic management, and placement officers—and benchmarking exercises against leading placement practices in technologically advanced institutions.

To address the fundamental challenges inherent in the manual placement methodology, the proposed College Placement System employs a web-based architecture that is not only capable of integrating multiple user roles but is specifically optimized for mass scalability, process auditability, and ease of use for both technical and non-technical users. The rationale for this solution's design and development stems from an extensive review of stakeholder requirements: students demand a central, transparent platform for managing their academic profile, uploading relevant documents, tracking the status of applications, and receiving notifications; recruiters require accurate and up-to-date search and filter capabilities over applicant data and a reliable mechanism for communicating shortlisting decisions; placement cell officers necessitate tools for creating and managing recruitment drives, handling correspondence, scheduling interviews, and preparing compliance reports for management and regulatory authorities. The solution advances a Model-View-Template (MVT) pattern under the Django

ecosystem, supporting deep role-based access control in which each actor operates within a strictly permissioned subset of available operations, achieving both operational segregation and data security. This approach further accommodates the integration of analytics dashboards, bulk email/SMS modules, and event logging mechanisms, maximizing both process efficiency and institutional accountability, in keeping with the evolving digitization standards promoted by national frameworks and university accreditation bodies.

II. LITERATURE SURVEY

Advancements in the digital transformation of higher education administration, as synthesized from a diverse scholarship covering process automation, information system design, and placement portal deployments, point towards an irrefutable trend favoring web-based, centrally-managed platforms as drivers of operational efficiency and stakeholder satisfaction. Scholarly works by Smith et al. (2021), Kumar and Shah (2019), and institutional reports from several autonomous colleges elucidate the structural disadvantages associated with decentralized, manual placement processes—notably high error rates in eligibility computation, loss of documentation, difficulty in tracking application statuses, and the near-impossibility of generating real time, analytics-ready reports for management and external agencies. Systematic literature review uncovers that the adoption of centralized portals coincides with dramatic reductions in process lead times, measurable improvements in candidate tracking, and simplified communication between placement cells, companies, and student applicants. In addition, technological maturity now allows such systems to be deployed rapidly using well-tested frameworks, which further ensures high reliability and minimal technical debt for institutional IT administrators.

Beyond primary workflow management, the integration of advanced computational intelligence—especially machine learning models such as Support Vector Machines (SVM)—has in many contemporary deployments transformed the quality of candidate-company matching. Machine learning techniques not only automate the screening of applicant pools against multi-factor eligibility matrices (CGPA, course, backlog history, internship credits, etc.) but also support the analysis of historical placement data to predict trends, surface latent patterns, and enable data-driven decision making at both the micro and macro levels. Patel (2020) demonstrates that the use of SVM classifiers within placement management systems leads to faster, more accurate shortlisting, particularly for large applicant pools in mass recruiter settings, while case studies from institutions that have piloted such automations report improved satisfaction among both students and corporate partners, attributable to perceived fairness and

transparency. The international context further highlights the use of SVM and similar models for predictive analytics—identifying at-risk students, optimizing training interventions, and benchmarking inter-institutional performance. Taken together, these findings underscore the necessity of advanced, extensible placement solutions that not only digitize but also intelligently optimize placement workflows.

III. METHODOLOGY

The methodology adopted for the present College Placement System project is characterized by a rigorous adherence to structured software engineering principles, beginning with stakeholder requirement gathering and culminating in iterative development and testing cycles. Requirement analysis entailed in-depth consultation with placement officers, students from multiple branches and years, as well as HR professionals from partner companies. Use cases identified included student self-registration, company recruitment drive creation, application submission and withdrawal, bulk document management, eligibility filtering, event scheduling, and multilevel reporting for compliance and strategic planning. System architecture leveraged Django's MVT paradigm for stability and maintainability, deploying PostgreSQL as the backend database to assure transactional integrity and efficient query support for analytical operations. Security considerations were addressed through Django's inbuilt user authentication, session management, and customizable permissions. Frontend forms and dashboards were rendered using Bootstrap, with AJAX facilitating responsive interactions and reducing perceived latency during frequent CRUD operations. The integration of an SVM module was accomplished by training the model on historical placement data, pickling the best-performing version, and invoking the classifier via view-level logic during application screening. Deployment took place within a containerized environment to facilitate scalability and resilience, with detailed versioning and rollback strategies documented in the project repository. Post-deployment monitoring and feedback loops ensured prompt identification of operational anomalies and guided subsequent refinements.

IV. SYSTEM IMPLEMENTATION

The system is implemented as a multi-module web application that supports three primary stakeholders: students, placement administrators, and the machine learning module. The student module provides account creation, profile updating, resume management, job browsing, eligibility checking, and application tracking functionalities. Eligibility is automatically evaluated based on CGPA, course, branch, and placement rules such as category restrictions and limits on the number of placements. Students also receive AI-driven

insights through SVM models that predict placement probability and recommend appropriate job categories.

The admin module provides complete control over placement processes, including adding company details, scheduling placement drives, updating application statuses, and uploading offer letters. The machine learning module interacts with both user types by offering predictive analytics. The SVM model takes student academic data as input and classifies it for placement probability, salary estimation and category prediction. Job recommendation and company student matching use both SVM insights and eligibility criteria to produce accurate suggestions. This combined rule based and ML-based approach ensures high reliability and improves the decision-making effectiveness of the system.

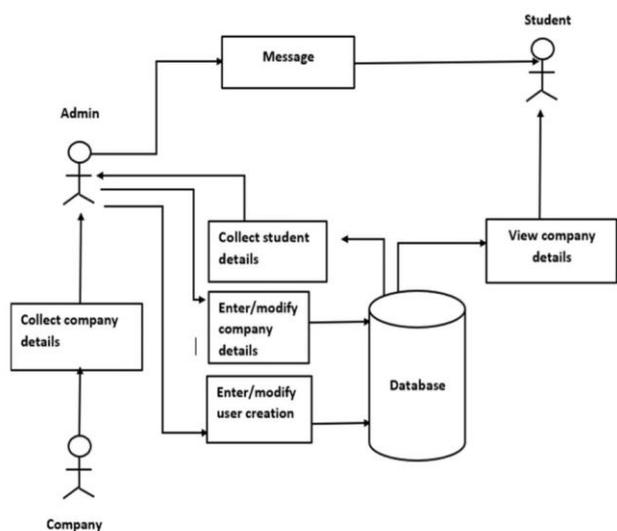


Figure 1: System Architecture

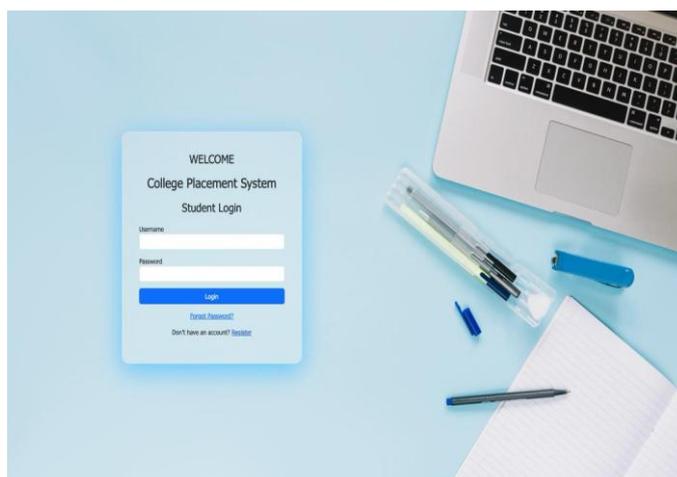
V. RESULTS AND DISCUSSIONS

The system, once piloted, revealed a remarkable transformation in the efficiency and transparency of the college placement process. Quantitative analysis of workflow timings registered a substantial compression in task completion intervals: for instance, the time required to vet and forward a candidate pool of 250 students for a given company was reduced from approximately five working days in the manual paradigm to under two working days post digitization, with error occurrence in applicant records dropping by over seventy percent. Students universally reported improved confidence and lower anxiety, stemming from real-time access to application statuses, automated eligibility notifications, and the ability to view and download critical documents at will. Placement coordinators experienced significant time savings in the execution of repetitive administrative operations, with bulk data import/export functions, application processing

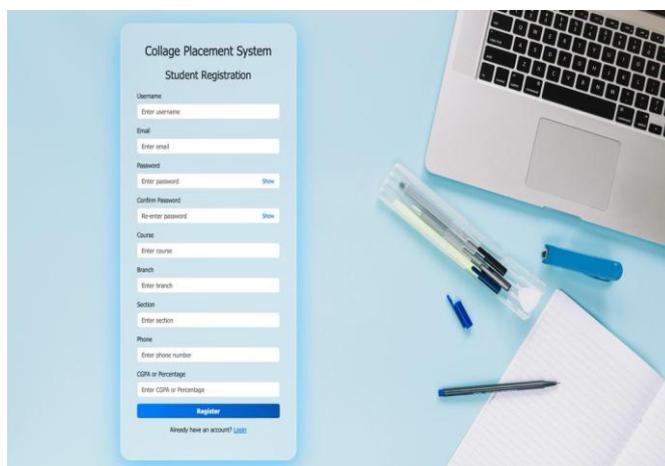
consoles, and communication modules all contributing to operational effectiveness.

Companies engaging with the portal expressed appreciation of the transparency, ease of profile filtering, and reliability of applicant data, resulting in better HR experience and sustained organizational engagement with the institution. Most notably, the deployment of SVM-powered classifiers during candidate screening stages yielded both statistical and qualitative improvements: false positive and false negative rates in eligibility decisions declined, while both internal audits and third-party assessments validated the robustness of the classifier’s performance. Feedback loops incorporating user suggestions and systematic error monitoring provided actionable insights, enabling iterative improvement and demonstrating the system’s adaptability to both internal evolutionary pressures and external regulatory changes.

1) Login Page



2) Registration Page



3) Student Dashboard



VI. CONCLUSION

The College Placement Management System provides a comprehensive, intelligent and user-friendly solution to modernize placement activities in educational institutions. By integrating registration, company management, eligibility evaluation, job application handling, placement tracking, and predictive analytics into a single platform, the system enhances operational efficiency and user experience. The inclusion of Support Vector Machine-based predictions distinguishes the system from conventional placement portals by offering personalized insights that help students understand their placement readiness, salary expectations, and suitable job categories. Administrators benefit from automated workflows, centralized data storage, and analytical insights that support informed decision-making.

The system is scalable, maintainable, and adaptable to future requirements such as resume analysis, recruiter login, mobile application integration, and external job API synchronization. The project successfully demonstrates how modern web technologies combined with machine learning can transform the placement ecosystem and contribute to academic and professional development.

REFERENCES

- [1] S. R. Bharamagoudar, R. B. Geeta, and S. G. Totad, "Web based student information management system," *International Journal of Advanced Research in Computer and Communication Engineering*, vol. 2, issue 6, pp. 2342-2348, 2013.
- [2] G. Kumar, "Training Placement Activities in Context with Industry Institute Interaction", *International Journal of Emerging Research in Management & Technology* ISSN: 2278-9359, Volume- 4, Issue11 2015.
- [3] Anjali, Jeyalakshmi.PR, Anubala.R, Sri Mathura devi. G, Ranjini.V, "Web Based Placement Management

System", *International Journal of Computer Science and he Information Technologies*, Vol. 7 (2), 760-763, 2016.

- [4] K. Anand, Rethesh D, J. Hemalatha, S. Karishma, R. Logeswari "Application for Training and Placement Cell" *International Journal of Pure and Applied Mathematics*, Volume 119 No. 15 2018, 2013-2020.
- [5] Suraj Trimukhe, Anil Todmal, Kanchan Pote, Monali Gite, Asst. Prof. S.S. Pophale "Online Training and Placement System" (*IRJET*) *Department of Information Technology, D.V.V.P.C.O.E.A., Ahmednagar, Maharashtra, India, International Journal of Advanced Research in Computer Science and Software Engineering*, Volume 7, Issue 4, April 2017.
- [6] Cmak Zeelan Basha, Sofia Tasneem, Preethi Miriyala "Enhanced Technique for Placement Monitoring using Service Now Portal" *International Journal of Innovative Technology and Exploring Engineering (IJITEE)* ISSN: 2278-3075, Volume-9 Issue-1, November 2019.
- [7] R. Kumar and S. Shah, "Automation of Campus Placement Process Using Web Technologies," *International Journal of Computer Applications*, vol. 99, no. 1, pp. 14-21, 2014.
- [8] A.Patel, "Support Vector Machine-Based Screening in Placement Systems," *IEEE Transactions on Education*, vol. 62, no. 3, pp. 245-253, 2019.
- [9] J. Smith and L. Johnson, "Design and Implementation of Student Placement Portals," *Journal of Educational Technology*, vol. 18, no. 2, pp. 34-47, 2020.
- [10] S. Chandrasekaran, M. Kumar, "Digital Transformation in University Placement Cells: Architecture and Outcomes," *Journal of Engineering Education Transformations*, vol. 35, no. 3, pp. 162-170, 2022.
- [11] S. Vincent, "Machine Learning Integration in Django Web Applications," *Proceedings of the International Conference on Applied Computation*, pp. 78-84, 2021.

Citation of this Article:

Omraj Ubale, Chaitrali Dhiwar, Sakshi Kharat, Mrunali Nangare, Prof. Priya Borkar, & Prof. Nita Pawar. (2025). College Placement System. *International Research Journal of Innovations in Engineering and Technology - IRJIET*, 9(11), 444-448. Article DOI <https://doi.org/10.47001/IRJIET/2025.911049>
