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Internship Management Portal

Rudra Gore, Sanchi Jamkar, Namrata Kalekar, Krushnali Ukirade

Student, Computer Science and Engineering, MIT College of Railway Engineering and Research, Barshi,

Solapur, Maharashtra, India

Prof. Alka Taur

Project Guide, Computer Science and Engineering, MIT College of Railway Engineering and Research, Barshi,

Solapur, Maharashtra, India

ABSTRACT: This paper presents a comprehensive Internship Management Portal integrated with AI- driven functionalities aimed at simplifying internship discovery, improving user interaction, and enhancing digital security. The portal features three core user panels: Admin, Employer, and Student/User, each tailored for streamlined access and usability. A key feature of this system is the integration of a **sponsorship module**, which allows external organizations or individuals to offer financial or resource-based support to selected students. This encourages broader participation in internships, especially for students who may face financial constraints.

KEYWORDS: [Internship Portal, AI Assistant, Resume Parsing, Skill Gap Analysis, Recommendation System, Flask, PHP, Internship Management]

I. INTRODUCTION

In the digital era, internships play a pivotal role in shaping the career trajectory of students and recent graduates. However, the traditional approach to securing internships is often tedious, disorganized, and lacks transparency for both applicants and employers. Many institutions and organizations still rely on manual processes for application, selection, and communication, which leads to inefficiencies and missed opportunities.

To address this issue, this paper proposes the development of a comprehensive Internship Management Portal that streamlines the end- to-end process of internship discovery, application, tracking, and communication. The system is designed with three main interfaces Admin Panel, User Panel and Employer Panel. All these personals has different tasks and workloads

What sets this portal apart is the **integration of Artificial Intelligence (AI)** to enhance usability, personalization, and security. The AI functionalities includes **Resume-based Internship Recommendation**, **Skill Gap Analyzer**.

By bridging the gap between students and organizations and adding intelligent features, the portal aims to provide an **efficient**, secure, and **AI-augmented** experience to all its users. This project also serves as a scalable model for educational institutions, training centers, and startups looking to streamline their internship offerings.

Patterns of Analysis Used in Our Model:

The Internship Management Portal adopts a modular design architecture based on the MVC pattern to separate data, interface, and control logic. PHP is used for server-side development, MySQL handles database operations, while Python integrates AI features. The system includes resume parsing using NLP techniques such as tokenization, stopword removal, and keyword matching

AI- based recommendation uses extracted skills to suggest relevant internships, while a skill gap analyzer compares existing and required skills for better user guidance.



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Additionally, a phishing URL detection module is implemented using a machine learning model that analyzes lexical patterns in URLs to detect threats. All AI modules are served via Flask APIs and integrated with the PHP frontend. Frontend elements include responsive design, dark/light theme toggles, and real-time validation. This system blends traditional portal features with AI-driven enhancements for secure, efficient, and intelligent internship management.

- 1. **Internship Browsing and Filtering** Students can explore active internship listings using category-wise filters. Listings are dynamically updated and managed by verified employers through a centralized posting system.
- 2. **Resume Upload and Parsing (Model: nltk+docx2txt)**. Users can upload their resumes in .docx format. The system extracts textual content using the docx2txt library and processes it using the nltk (Natural Language Toolkit) to tokenize and filter relevant keywords.
- 3. Skill Extraction and Gap Analysis (Model: nltk+stopwordsfiltering). The resume parsing module identifies technical and soft skills using a predefined skills corpus.
- 4. Internship Recommendation System (Model: Rule-based Matching with Cosine Similarity). Based on the skills identified from the user's resume, the system ranks and recommends internships. Internships are evaluated using keyword-based similarity scoring techniques such as Cosine Similarity on TF-IDF vectorized skill sets.
- 5. **Phishing URL Detection (Model:** Logistic Regression/**NaiveBayes).** The platform integrates a phishing URL detection API that classifies user-entered URLs as legitimate or suspicious.
- 6. Chat-style AI Assistant (Model: Rule- basedConversationalEngine). Lightweight conversational bot assists users with portal- related queries. Though rule-based in the current version, it's designed to be scalable with integration possibilities using transformer models or GPT APIs or Google Gemini AI in future upgrades.
- 7. Real Time Messaging(Websocket+AJAX)
- 8. Users (students and employers) can exchange messages through an internal chat system, improving engagement and simplifying communication for interviews and internship coordination.
- 9. Role-Based Authentication & Authorization
- 10. Access control is enforced across student, employer, and admin roles, ensuring that data and features are securely segregated.

The Internship Management Portal incorporates both standard system-level functionalities and advanced AI-driven capabilities

II. TECHNIQUES AND MODELS USED FOR INTERNSHIP PORTAL MANAGEMENT

The Internship Management Portal is a full-stack web-based system developed with a focus on usability, automation, and intelligence-driven decision-making. To enhance the system's core functionalities, several programming, machine learning, and natural language processing techniques were utilized.

The web application employs a PHP-based server-side backend, handling authentication, session management, and CRUD operations on internships and user data. A MySQL database is used to manage structured data including user profiles, internships, applications, chat history, and saved internships. The frontend is built using HTML, CSS, and JavaScript, featuring dynamic content rendering and responsive design with support for both light and dark themes.

For the AI-powered modules, the resume parser utilizes the docx2txt library to extract plain text from .docx resume files. This raw text is then tokenized and cleaned using the nltk (Natural Language Toolkit) package, where stopwords are filtered and relevant tokens (e.g., programming languages, tools, soft skills) are identified. These extracted features are stored in a temporary context and passed through skill analysis logic, which compares them with predefined target skills for a particular domain, thereby highlighting missing competencies.

The recommendation engine leverage implement keyword-based matching to find the most relevant internships based on the user's extracted skillset. A simple but effective cosine similarity algorithm is implemented to rank internships in the database based on overlap with the user's profile keywords. Although no deep learning or collaborative filtering is used in the current version, the architecture allows for future expansion toward personalized recommendations.

The phishing URL detection feature applies traditional classification models such as Logistic Regression and Naive Bayes.



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The model is trained using manually engineered features such as the length of the URL, presence of special characters, redirection depth, and use of misleading domain names. The dataset for training comprises both phishing and benign URLs. The trained model is then wrapped using a Flask API and accessed asynchronously from the frontend.

In addition, a basic AI chatbot interface is implemented using a rule-based logic framework. While simple, the chatbot allows users to ask questions related to internships, skill recommendations, and system navigation. This module is designed to be easily upgraded to use GPT-based APIs or RNN-based conversational models for a more natural interaction experience.

All AI modules are decoupled from the main application using RESTful API services developed in Python with Flask. This microservice-based design allows the system to be scalable, modular, and compatible with future deep-learning.

Why we Use This Portal?-

The primary objective behind building this portal is to bridge the gap between aspiring interns and verified employers through a structured, automated, and intelligent platform. In today's digital age, traditional approaches to finding internships

III. COMPARISON WITH EXISTING SYSTEM

Internship portals such as LinkedIn, Internshala, and Naukri.com have long served as platforms for job seekers and employers. While these platforms offer robust features for internship discovery and application management, they often lack personalized guidance and intelligent automation tailored for fresh graduates and students. The proposed Internship Management Portal introduces several improvements and intelligent features not commonly present in existing systems.

Internshaala	
Linkdin	
Workindia	
Apna	

1] Firstly, most traditional systems rely on manually curated profiles and static filters to recommend internships, without analyzing the user's resume or skill profile in depth. In contrast, our system integrates **Natural Language Processing (NLP)** techniques to automatically parse uploaded resumes, extract skills, and suggest relevant internships based on content similarity and domain-specific keywords. This reduces user effort and enhances match accuracy.

Secondly, phishing URL detection is absent in the majority of popular internship portals. Our platform addresses this cybersecurity concern by implementing a **Logistic Regression– based model** trained on a dataset of phishing and legitimate URLs, thus ensuring that users Furthermore, while chatbots are becoming more common in enterprise-level job portals, they are either extremely generic or outsourced to third- party services. Our system includes a custom- built AI Assistant designed specifically to answer queries related to internships, skill building, and profile enhancement.

This assistant operates on a **rule-based NLP** Engine, which can be scaled to use deep learning or transformer-based models like GPT for contextual understanding in future updates.

Additionally, while systems like LinkedIn offer rich analytics for employers, our **Admin Panel** provides visual insights on intern engagement, applications received, and success rates with a focus on institutional and academic use-cases.



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The table below summarizes the comparison:

Feature	Internshala	LinkedIn	Our System
Resume Parsing wit NLP	h 🗙	×	~
Internship Recommendation vi AI	a 🗙	×	 Image: A start of the start of
Skill Gap Analyzer	×	×	
Built-in Phishin URL Detection	g 🗙	×	
Custom Internship A Chat Assistant	×	✓ (Limited)	~
Institution- Oriente Admin Dashboard	d 🗙	×	 Image: A start of the start of
Dark Mode Toggle	~	 Image: A start of the start of	
Offline Resume Upload + Ski Mapping	11 🗙	×	~

III. CONCLUSION

The **Internship Management Portal** with integrated AI features offers a comprehensive and scalable solution for streamlining internship-related processes across students, employers, and administrators. By merging traditional webbased functionalities with intelligent features such as resume parsing, skill gap analysis, internship recommendation, phishing URL detection, and a conversational AI assistant, the system not only enhances user experience but also introduces intelligent decision support into career-building workflows.

This project presents the design and development of a comprehensive **Internship Management Portal** integrated with **Artificial Intelligence (AI)** capabilities to enhance the overall experience for students, employers, and administrators. The system bridges the gap between academic learning and industry exposure by offering a centralized platform where students can explore internships, upload resumes, apply, and receive smart recommendations based on their skills.

The platform enables students to discover relevant internship opportunities tailored to their skills, provides employers with efficient tools for managing internship posts and applications, and offers admins meaningful insights through data analytics. Moreover, AI integration strengthens the portal's ability to automate content understanding and elevate security through phishing detection, which is a critical aspect in digital interactions.

With modular design and RESTful API integration, the project is extendable for future enhancements such as personalized learning paths, deep learning-based recommendation systems, and secure document verification mechanisms. The proposed system bridges the gap between education and industry expectations by leveraging the power of intelligent automation in a user-centric web application.



In conclusion, this project exemplifies how AI and modern web technologies can be synergized to create a robust, realtime, and practical solution for internship lifecycle management, addressing key challenges faced by students and organizations alike.

This platform has potential for deployment in educational institutions and professional job portals, aligning with the growing demand for smart, secure, and user-centric internship management-solutions.

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| Mobile No: +91-6381907438 | Whatsapp: +91-6381907438 | ijmrset@gmail.com |

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