

“Alumbridge”
Second Year Mini Project Report

Submitted in partial fulfillment of the requirements of the
degree

**BACHELOR OF ENGINEERING IN COMPUTER
ENGINEERING**

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CERTIFICATE

This is to certify that the Mini Project entitled “ **AlumBridge** ” is a bonafide work of **Garv Chawla(16), Harshita Bodwani(12), Khushi Jeswani(32), Vanshika Raheja** submitted to the University of Mumbai in partial fulfillment of the requirement for the award of the degree of “**Bachelor of Engineering**” in “**Computer Engineering**” .

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1. Introduction

1.1 Introduction

The "AlumBridge" initiative aims to establish a robust connection between our alumni and current students while also providing avenues for job opportunities. By fostering mentorship, networking, and a sense of belonging, this project seeks to create an environment where alumni can guide and inspire students in making informed decisions about their academic and professional paths. Through networking events, collaborative projects, and the inclusion of job opportunities, students will have enhanced career prospects, facilitated by alumni engagement. This initiative not only addresses immediate needs but also contributes to the long-term vitality of our institution by building a connected and engaged alumni community that actively supports both current students and fellow alumni in their professional endeavors.

1.2 Motivation

The "AlumBridge" initiative is motivated by several key drivers, with the addition of providing job opportunities:

Maximizing Educational Impact: We believe in enriching the educational journey beyond the classroom. By connecting students with successful alumni, we aim to provide valuable real-world insights and mentorship, enhancing their educational experience. Additionally, through alumni-led workshops and seminars, students can gain practical skills relevant to their future careers.

Career Development: Our commitment to holistic student development extends to their professional growth. Through alumni networks and collaborations, we aim to provide students with unique opportunities to kickstart their careers, including internships, job shadowing, and direct job placements facilitated by alumni connections.

Community Building: We recognize the importance of a strong, connected community in nurturing well-rounded individuals. The project aims to create a sense of belonging, emotional support, and friendship within our educational family, bolstering the overall well-being of both students and alumni. Job fairs and networking events will further strengthen these bonds, fostering professional relationships alongside personal connections.

Institutional Legacy: Fostering strong alumni-student relationships perpetuates the legacy of our institution. As alumni continue to engage with and support their alma mater, it reinforces the reputation and impact of our educational institution. Alumni job referral programs and alumni-led recruitment efforts contribute to this legacy by offering employment opportunities to current students and recent graduates.

Mutual Growth: We are driven by the belief that this project will benefit not only students but also our esteemed alumni. The opportunity to give back, share knowledge, and witness the development of the next generation can be profoundly rewarding for our alumni. Moreover, alumni involvement in career mentorship and job placement initiatives allows them to directly contribute to the professional success of current students, fostering a sense of pride and fulfillment.

The "Strengthening Bonds" project aims to unite these motivations into a harmonious and

mutually beneficial relationship, where knowledge, support, friendship, and job opportunities flourish, creating a thriving academic community that transcends the boundaries of time and space.

1.3 Problem Statement and Objectives

There's a noticeable gap between alumni and current students, leading to limited interaction, missed mentorship opportunities, and insufficient career guidance. This affects students' educational and professional growth and underutilizes alumni expertise. Moreover, there's a lack of structured pathways for alumni to offer job opportunities to students.

Objectives:

Increase Interaction: Encourage more frequent interaction between alumni and students through online platforms, events, and mentorship programs.

Enhance Career Guidance and Job Opportunities: Establish channels for alumni to offer job opportunities, internships, and career guidance.

Strengthen Sense of Belonging: Cultivate a strong sense of belonging among alumni and students through reunions, social events, and collaborative projects.

Measure Success: Develop metrics to assess the effectiveness of alumni engagement efforts and gather feedback for improvement.

1.4 Organization of the Report

The introduction sets the stage for the report, beginning with a general overview (1.1 Introduction) of the topic. Motivation (1.2) elucidates the reasons driving the research or project, followed by the Problem Statement & Objectives (1.3) that delineate the issue at hand and the intended goals. The organization of the report (1.4) is outlined, providing readers with a roadmap of what to expect.

The Literature Survey delves into existing knowledge. It commences with a Survey of Existing System (2.1), presenting an overview of the current state of the subject.

Limitations of the existing system or research gaps (2.2) are discussed, identifying areas where improvements or advancements are needed. The section also highlights the Mini Project Contribution (2.3), explaining how the present project aims to fill the identified gaps.

The Proposed System introduces a novel approach or system. Beginning with an Introduction (3.1), it provides a comprehensive overview. Architecture/Framework (3.2) offers insights into the structure and framework of the proposed system, while Algorithm and Process Design (3.3) explain the methodologies employed. Details of Hardware & Software (3.4) shed light on the technological aspects.

Experiments and Results (3.5) present findings, and Conclusion and Future Work (3.6) summarize the outcomes and suggest future research directions.

Lastly, the References section is a compilation of all the sources referenced throughout the report, allowing readers to explore the cited works in depth.

2. Literature Survey

2.1 Survey of Existing system

Students: Current students are the primary beneficiaries of the project. They engage with alumni not only for mentorship, networking, and community building but also to explore job opportunities. Their active participation and readiness to leverage alumni involvement for career advancement are crucial.

Alumni: Graduates of the institution who can offer their time, expertise, and experience to support current students through mentorship and networking opportunities, as well as by posting job openings. By engaging with current students and offering job opportunities, alumni play a vital role in the professional development and career success of the next generation.

Faculty and Staff: They play a role in facilitating connections between students and alumni, organizing events, and promoting the project's initiatives within the institution.

Alumni Relations Office: This department leads efforts to engage alumni, maintain a database, and coordinate alumni involvement in various project activities.

Student Affairs Office: Responsible for implementing student-focused programs and events, working closely with students and faculty to create a conducive environment for alumni-student interactions.

Project Coordinators and Organizers: Individuals or teams responsible for planning and executing specific project initiatives, such as events, mentorship programs, and networking opportunities.

Institutional Leadership: Administrators and senior faculty members support the project's objectives, allocate resources, and provide guidance.

Evaluators and Researchers: Those responsible for assessing the project's impact and effectiveness and making data-driven recommendations for improvements.

Students' Associations: Student-run organizations or clubs may collaborate with the project to engage students and facilitate their involvement in alumni-student activities.

Alumni Associations: Alumni-led groups may actively participate in the project, helping to organize events, share experiences, and connect with current students. The success of the project relies on the collaboration and active involvement of these diverse stakeholders, each contributing their unique perspectives, skills, and resources to strengthen alumni-student relationships.

2.2 Limitation Existing system or research gap

Our project may encounter several limitations, including:

Limited Alumni Engagement: Not all alumni may be available or willing to participate in project activities, leading to uneven opportunities for students to benefit from alumni interactions.

Time Constraints: Alumni, students, and faculty may have busy schedules, making it challenging to coordinate and participate in events and mentorship programs.

Resource Constraints: The project's success may depend on available resources, including funding, staff, and infrastructure, which may be limited.

Alumni Demographics: The diversity of alumni, including their geographical location and professions, can limit the range of opportunities available to students.

Overwhelming Demand: If there is a high demand for alumni-student interactions, the project may struggle to meet the needs of all interested students.

Mismatched Expectations: Alumni and students may have different expectations regarding the outcomes of their interactions, which can lead to misunderstandings and disappointment.

Lack of Tracking and Evaluation: Measuring the project's impact may be challenging without robust tracking and evaluation mechanisms, making it difficult to identify areas for improvement.

Cultural and Generational Differences: Differences in communication styles and values between alumni and current students can pose challenges in building meaningful relationships.

Alumni Database Accuracy: The accuracy and completeness of the alumni database can affect the project's ability to reach and engage with alumni effectively.

Resistance to Change: Resistance from some stakeholders, including alumni, students, or faculty, may impede the adoption of new initiatives or approaches.

External Factors: External economic, social, or political factors can influence the availability and willingness of alumni to engage in the project.

Privacy Concerns: Concerns about privacy and data protection may limit the extent to which alumni and students are willing to share personal information and engage in certain activities. Identifying and addressing these limitations proactively will be essential for the project's success and sustainability.

2.3 Mini Project Contribution

The "AlumBridge" contributes significantly to the institution and its stakeholders in several ways:

Strengthened Alumni-Student Relationships: The project enhances connections between alumni and students, fostering mentorship, networking, and support, which, in turn, leads to a more robust and closely-knit academic community.

Enhanced Educational Experience: Current students benefit from the knowledge, guidance, and insights shared by alumni, enriching their educational journey and preparing them for the professional world.

Career Development: The system provides valuable career guidance, networking opportunities, and collaboration prospects, thus increasing the employability and professional development of students.

Alumni Engagement: The project re-engages alumni with their alma mater, offering them opportunities to give back, share experiences, and contribute to the success of current students, strengthening their emotional connection to the institution.

Institutional Reputation: A thriving alumni-student relationship system can positively impact the reputation and credibility of the institution, showcasing a commitment to holistic education and alumni success.

Data-Driven Decision-Making: The project generates data insights that enable the institution to make informed decisions, refine strategies, and tailor its approach to meet the evolving needs of alumni and students.

Sustainable Alumni Support: By nurturing a culture of support and involvement, the project lays the foundation for lasting alumni contributions, both in terms of knowledge sharing and financial support.

Networking Opportunities: The system provides a platform for students to build a professional network early in their academic journey, which can be invaluable for future career growth.

Personal and Professional Growth: Alumni and students benefit from a dynamic ecosystem that encourages continuous learning, networking, and mentorship, promoting personal and professional development.

Global Connectivity: The system transcends geographical barriers, allowing alumni and students to connect irrespective of their physical location, broadening the scope

of opportunities.

Innovation in Education: By embracing modern technology and data-driven insights, the institution demonstrates innovation and adaptability, keeping pace with the changing educational landscape.

In summary, the "Alumni-Student Relationship Enhancement System" contributes to the institution's mission of holistic education, personal and professional growth, and the realization of individual potential. It serves as a catalyst for building enduring connections, personal and professional development, and the sustained success of its academic community.

3. Proposed System

3.1 Introduction

In today's rapidly changing educational landscape, cultivating strong connections between alumni and current students is crucial. Our proposed "AlumBridge" initiative is a cutting-edge solution designed to bridge this gap and create a thriving ecosystem of mutual support and growth within our academic community, including job opportunities.

As the academic journey extends beyond classrooms, alumni represent living legacies of success stories, while students are the torchbearers of our institution's future. The proposed system aims to fortify and nourish the bonds between these pivotal components, fostering a dynamic and meaningful connection that enriches the educational experience for all.

This system sets out to address several key objectives, including:

Efficient Networking: By offering a centralized platform, the system will facilitate effective alumni-student networking, forging connections that transcend geographical boundaries and enabling valuable information exchange, including job opportunities.

Mentorship Opportunities: It will provide a structured framework for mentorship programs, connecting students with alumni who can offer guidance and wisdom on academic and professional paths, including insights into job opportunities and career development.

Community Building: The system will serve as a hub for community engagement, offering forums, events, and interactive features that nurture a sense of belonging, including job fairs and networking events aimed at enhancing career prospects.

Data-Driven Insights: By harnessing the power of data analytics, the system will offer insights into the evolving needs and preferences of both alumni and students, allowing for more targeted engagement strategies, including tailored job recommendations and career pathways.

In an era marked by global connectivity, the "AlumBridge" represents our institution's dedication to providing holistic education, personal and professional growth, and the realization of individual potential, including job opportunities. It is a testament to our commitment to fostering relationships that transcend generations, enabling the seamless flow of knowledge, support, and inspiration. Together, we will build a thriving academic community where bonds of learning, friendship, and success endure.

3.2 Architecture / Framework

Creating a comprehensive architecture and framework for the "AlumBridge," including job opportunities, involves a detailed exploration of technical specifics and planning. Here's a simplified overview:

System Architecture:

The system can be designed as a web-based platform to ensure accessibility and scalability, incorporating job opportunities for alumni to post and students to apply. It comprises three main layers:

1) Presentation Layer:

User Interface (UI) for alumni and students to interact with the system, including job listings and application interfaces.

User registration, profiles, and account management, with options for alumni to post job opportunities.

Event registration and participation interfaces, including job fairs and networking events.

Messaging and forum features for communication, including discussions about job opportunities.

2) Application Layer:

Logic for mentorship matching based on user profiles and preferences, integrating job preferences and career goals.

Algorithms for event management, notifications, and recommendations, including job alerts.

Analytics engine for user data collection and insights, identifying job trends and preferences.

Security protocols for data protection, including secure job application processes.

3) Data Layer:

Relational database to store user profiles, event data, messages, and job listings.

Data warehousing for analytics and insights on job opportunities and career paths.

Security measures, including encryption and access controls, for job-related data.

Framework:

The development of the "AlumBridge" can leverage established frameworks and technologies:

Front-End Frameworks:

Utilize HTML, CSS, and JS for UI development, integrating job listing and application features.

Implement Tailwind CSS for design and layout consistency, including job-related UI components.

Back-End Frameworks:

Use PHP for building the server, supporting job posting and application functionalities.

Incorporate Express.js or FastAPI for routing and middleware, facilitating job-related processes.

Database Management:

Employ MySQL for data storage, managing user profiles, event data, messages, and job listings, including job application records.

This architecture and framework provide a foundation for building a robust "AlumBridge" platform while integrating job opportunities seamlessly into the user experience. The specific technologies and frameworks chosen will depend on the development team's expertise and the project's requirements.

3.3 Algorithm and Process Design

3.4 Details of Hardware & Software

Hardware Requirements:

- Computer /Mobile Device
- Stable Internet Connection

• Software Requirements:

- JS
- PHP
- CSS
- HTML
- REACT
- MySQL

3.5 Experiments and result

In the "AlumBridge" project, various experiments can be conducted to evaluate its effectiveness and make informed enhancements, including job opportunities provided by alumni to students. Here are some potential experiments:

User Onboarding Optimization:

Experiment with different user onboarding processes to determine which approach results in higher user registrations.

Test the impact of personalized onboarding emails or incentives (e.g., free webinars) to encourage users to complete their profiles.

Explore the integration of job opportunity notifications and incentives for alumni to post job openings during onboarding, assessing their impact on user engagement and registration rates.

Mentorship Matching Algorithm:

Experiment with different algorithms for matching alumni mentors with students.

Compare the effectiveness of AI-driven matching algorithms against manual matching based on shared interests or career goals.

Enhance the matching algorithm to include job-related preferences and career aspirations, enabling better alignment between mentors and students seeking career guidance.

Engagement Enhancement:

Run A/B tests on different features aimed at increasing user engagement.

Analyze the impact of gamification elements, such as badges and rewards, on user participation in events and discussions.

Implement engagement strategies specifically tailored to job opportunities, such as notifications for relevant job postings and incentives for alumni to actively participate in job-related discussions and events.

Event Effectiveness:

Experiment with event formats, such as webinars, workshops, or social gatherings, to assess which events have the most substantial impact on alumni-student relationships.

Measure the success of virtual events versus in-person events if applicable.

Integrate job fairs or career networking events into the event lineup, evaluating their effectiveness in connecting students with job opportunities offered by alumni.

Communication Channels:

Test the effectiveness of different communication channels for connecting alumni and students, such as chat, discussion forums, or email.

Analyze response rates and user satisfaction with different communication methods, including job-related communication channels like job posting announcements and application notifications.

Data-Driven Insights:

Experiment with data analytics tools to identify trends and preferences among users. Implement machine learning models to make personalized job opportunity recommendations to users based on their skills, interests, and career goals.

Analyze job-related data to gain insights into alumni hiring preferences and students' job search behavior, informing the optimization of job opportunity features.

Security and Privacy Tests:

Conduct penetration testing and security audits to identify vulnerabilities and ensure user data protection.

Experiment with different privacy settings and assess user preferences for data sharing, particularly regarding job-related information and applications.

Mobile App Adoption:

Determine the impact of introducing mobile apps for the system on user engagement and accessibility.

Compare user activity between the web platform and mobile apps, focusing on job-related interactions and features available on both platforms.

Feedback Loops:

Implement feedback mechanisms to gather user feedback on their experiences.

Experiment with different feedback collection methods and evaluate the responsiveness to user suggestions, including feedback specifically related to job opportunities and career services.

User Satisfaction Surveys:

Conduct periodic surveys to measure user satisfaction with the system.

Test the effectiveness of changes and improvements by comparing survey results over time, including satisfaction with job-related features and services.

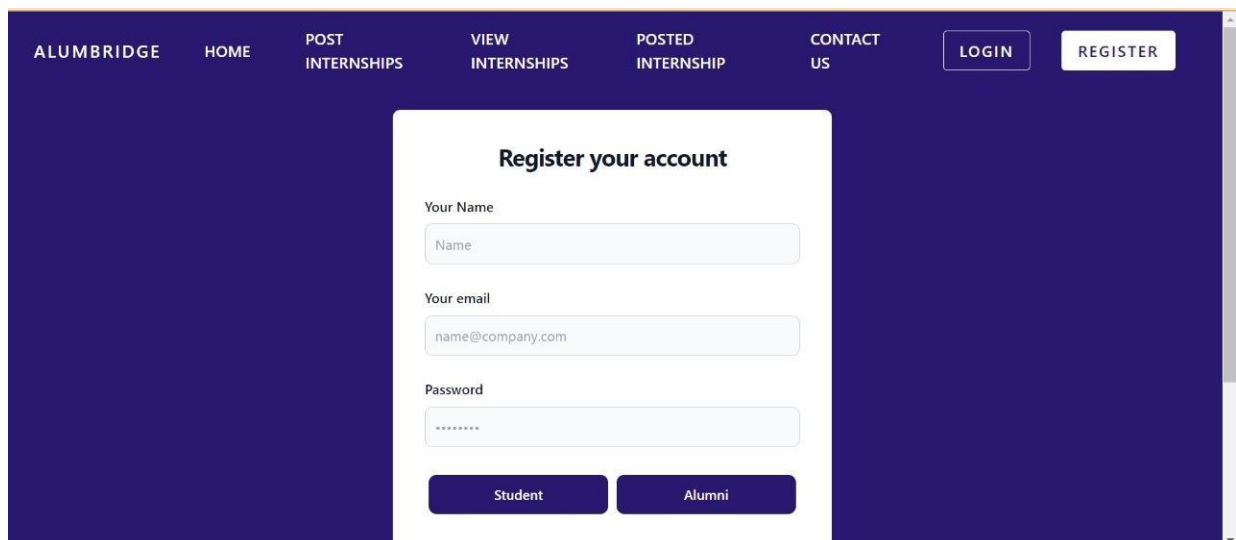
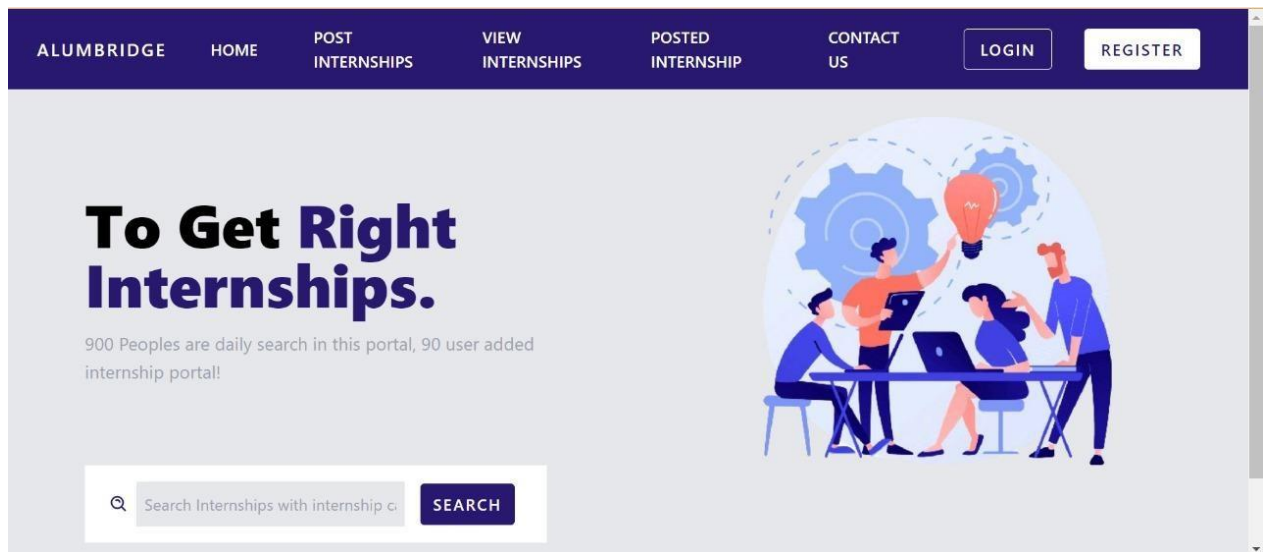
Conversion Rate Optimization (CRO):

Experiment with CRO techniques to enhance conversion rates for event registrations, mentorship program sign-ups, and user engagement, focusing on job-related conversion metrics such as job application rates and alumni engagement in job-related activities.

Load Testing:

Simulate heavy user loads and assess the system's performance, scalability, and responsiveness under peak usage conditions, including scenarios where job opportunities receive significant traffic and interactions.

RESULTS:



ALUMBRIDGE

HOME

POST
INTERNSHIPS

VIEW
INTERNSHIPS

POSTED
INTERNSHIP

CONTACT
US

LOGIN

REGISTER

name@company.com

Password

Student

Alumni

Sign Up

Already have an account [Sign In](#)

Sign in to your account

☒ Student

☐ Alumni

Your email

name@company.com

Password

☐ Remember me

[Forgot password?](#)

Sign In

Don't have an account yet? [Sign up](#)

ALUMBRIDGE
HOME
POST INTERNSHIPS
VIEW INTERNSHIPS
POSTED INTERNSHIP
CONTACT US
LOGIN
REGISTER

ENTER INTERNSHIP DETAILS

Title :

Salary :

Email :

Company :

Description :

ALUMBRIDGE
HOME
POST INTERNSHIPS
VIEW INTERNSHIPS
POSTED INTERNSHIP
CONTACT US
LOGIN
REGISTER

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3.6 Conclusion and Framework

Framework for the Alumni-Student Relationship Enhancement System, including Job Opportunities:

User Registration and Profiles:

Alumni and students create profiles with personal and professional information. Specify areas of expertise, career interests, and job preferences to facilitate job opportunities. Allow alumni to post job openings and students to indicate their job-seeking status and preferences.

Mentorship Platform:

Facilitate mentorship programs with a matching algorithm based on shared interests, career goals, and job opportunities.

Enable students to seek career guidance and advice from alumni mentors, including discussions on job prospects and industry insights.

Networking Hub:

Create a virtual space for alumni-student interactions, including job-related discussions, networking, and mentorship opportunities.

Implement features for alumni to share job opportunities directly with students, fostering career connections and opportunities.

Event Management:

Organize alumni-student events, webinars, and workshops focused on career development and job opportunities.

Promote and manage registrations and participation in job fairs, networking events, and industry panels.

Data Analytics:

Gather and analyze user data to identify trends and preferences related to job opportunities and career paths.

Use insights to tailor job recommendations, mentorship matches, and event offerings to meet the needs of both alumni and students.

Security and Privacy Measures:

Implement robust data protection and privacy features to safeguard user information, particularly job-related data.

Ensure secure transmission and storage of job applications and communication between alumni and students regarding job opportunities.

Job Opportunities:

Provide a dedicated section for alumni to post job openings, internships, and career opportunities available within their networks or organizations.

Enable students to search, filter, and apply for job opportunities directly through the platform, streamlining the job search process. Facilitate communication between alumni and students regarding job postings, including application submissions, interview scheduling, and follow-up discussions.

Monitor job posting engagement and application metrics to assess the effectiveness of job opportunities provided through the platform, optimizing the job search experience for students and alumni alike.

Conclusion:

The "AlumBridge" stands as an innovative solution poised to bridge the gap between alumni and students in our educational community while integrating valuable job opportunities. By offering a centralized platform for networking, mentorship, and community building, this system has the potential to revolutionize the educational journey for students, empower alumni to contribute meaningfully, and foster an environment where knowledge, support, and friendship thrive.

As we embark on implementing this system, we anticipate it will serve as a cornerstone in fortifying the bonds of learning, personal and professional growth, and success within our academic family. The inclusion of job opportunities further enriches this ecosystem, providing students with direct access to career pathways and alumni with avenues to contribute to the professional development of future generations. Together, we are positioned to cultivate a vibrant and interconnected community that transcends the constraints of time and space.