AI DRIVEN REVIEW SUMMARIZER FOR FASTER DECISION MAKING

GE19612 - PROFESSIONAL READINESS FOR INNOVATION, EMPLOYABILITY AND ENTREPRENEURSHIP PROJECT REPORT

Submitted by

AMALLESH B **(2116220701024)**

BALAJI G **(2116220701036)**

CHARAN JEETH EM **(2116220701052)**

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

RAJALAKSHMI ENGINEERING COLLEGE

ANNA UNIVERSITY, CHENNAI

MAY 2025

RAJALAKSHMI ENGINEERING COLLEGE, CHENNAI

BONAFIDE CERTIFICATE

Certified that this Project titled **"PLACEMENT TRACKER: A SMART SYSTEM FOR CAMPUS RECRUITMENT MANAGEMENT"** is the bonafide work of **AMALLESH B(220701024),BALAJI G(220701036),CHARAN JEETH EM(220701052)** who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

SIGNATURE
Dr. P. Kumar., M.E., Ph.D.,
HEAD OF THE DEPARTMENT
Professor
Department of Computer Science and Engineering,
Rajalakshmi Engineering College,
Chennai - 602 105.

SIGNATURE
Dr. M. Ayyadurai M.E., Ph.D.,
ACADEMIC SUPERVISOR
Assistant Professor
Department of Computer Science and Engineering,
Rajalakshmi Engineering College,
Chennai - 602 105.

Submitted to Mini Project Viva-Voce Examination held on _____

Internal Examiner **External Examiner**

ABSTRACT

With so many people sharing their opinions online—whether it’s about a new phone, a hotel stay , or a recent movie—reviews have become a crucial part of how we make decisions. But going through hundreds or even thousands of reviews to find what really matters can be overwhelming. The Review Summarizer System is designed to make this easier. It takes large volumes of user reviews and turns them into short, clear summaries that capture the overall sentiment and key points. By using natural language processing (NLP) and machine learning, the system understands what people are saying, whether they’re happy, frustrated, or somewhere in between. It highlights what most people are talking about—like product quality, customer service, or delivery experience—so users can quickly get the gist without reading everything. This not only helps customers make faster, smarter choices, but also gives businesses a better way to understand feedback and improve what they offer. Whether it's for shopping, travel, or entertainment, the system can adapt to different needs. In a world full of information, the Review Summarizer helps cut through the noise and bring out what really matters.

ACKNOWLEDGMENT

Initially we thank the Almighty for being with us through every walk of our life and showering his blessings through the endeavor to put forth this report. Our sincere thanks to our Chairman **Mr. S. MEGANATHAN, B.E, F.I.E.**, our Vice Chairman **Mr. ABHAY SHANKAR MEGANATHAN, B.E., M.S.,** and our respected Chairperson **Dr. (Mrs.) THANGAM MEGANATHAN**, **Ph.D.,** for providing us with the requisite infrastructure and sincere endeavoring in educating us in their premier institution.

Our sincere thanks to **Dr. S.N. MURUGESAN, M.E., Ph.D.,** our beloved Principal for his kind support and facilities provided to complete our work in time. We express our sincere thanks to **Dr. P. KUMAR, M.E., Ph.D.**, Professor and Head of the Department of Computer Science and Engineering for his guidance and encouragement throughout the project work. We convey our sincere and deepest gratitude to our internal guides **Dr. M. AYYADURAI, M.E., Ph.D.,** and **Dr. G.M. SASIKALA, M.E., Ph.D.** We are very glad to thank our Project Coordinator, **Dr. M. AYYADURAI** Assistant Professor Department of Computer Science and Engineering for his useful tips during our review to build our project.

AMALLESH B **2116220701024**

BALAJI G **2116220701036**

CHARAN JEETH E M **2116220701052**

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

1.1 GENERAL

Every day, millions of people share their experiences online—reviewing everything from the latest gadgets and local restaurants to travel destinations and streaming content. These reviews have become a trusted source of information, helping others make better decisions based on real feedback. But as helpful as they are, the sheer number of reviews available can quickly become overwhelming. Trying to read through hundreds of opinions just to understand the general sentiment or common issues can be both time-consuming and exhausting.

That's where a Review Summarizer System steps in. Instead of expecting users to scroll endlessly through pages of comments, this system uses intelligent algorithms to analyze and summarize vast amounts of review data. By leveraging Natural Language Processing (NLP) and machine learning, the system can identify key topics, common sentiments, and recurring patterns in feedback. It then condenses all this information into short, easy-to-read summaries that give users exactly what they need to know.

Whether it's highlighting what most people loved about a product or pointing out consistent complaints, the system helps users quickly get a clear picture. This makes decision-making faster, more efficient, and far less stressful. Businesses also benefit by gaining instant insights into customer opinions, allowing them to respond faster, improve their offerings, and stay competitive in a review-driven world.

One of the major strengths of this system is its adaptability. It can be used across

various industries—be it retail, hospitality, entertainment, or tech—making it a versatile tool for both consumers and companies. Whether someone is shopping online, booking a vacation, or choosing a new app, the Review Summarizer System can provide valuable guidance without the need to wade through countless reviews.

Ultimately, this system is about simplifying information. In an age of digital overload, it helps people focus on what really matters by turning unstructured, messy data into clear, actionable insights. It doesn't just save time—it adds clarity, helping people make smarter choices with more confidence.

1.2 OBJECTIVE

The main objective of the Review Summarizer System is to simplify the way people understand and use online reviews. In today's fast-paced digital world, customers rely heavily on reviews to make informed decisions—whether they're buying a product, booking a hotel, or trying out a new service. But with thousands of reviews scattered across different platforms, it becomes difficult and often overwhelming to go through them all. Most people don't have the time or patience to read dozens of reviews, and often end up making choices based on just a few random opinions. This is not only inefficient, but it can also lead to poor decisions

The Review Summarizer System aims to solve this problem by offering a quick and reliable way to digest large amounts of review content. Using advanced technologies like Natural Language Processing (NLP), sentiment analysis, and machine learning, the system is designed to understand human language, detect patterns, and generate meaningful summaries. These summaries capture the essence of what most people are saying—highlighting common praises, complaints, and frequently mentioned topics—so users can make better, faster decisions without drowning in information.

But this system isn't just for consumers. Another key objective is to help businesses better understand their customers. Customer feedback is one of the most valuable sources of insight a company can have, but reading through thousands of reviews manually is nearly impossible. By automatically analyzing and summarizing this feedback, the system provides businesses with a clear picture of what they're doing well and where they need to improve. This can lead to better products, improved services, and ultimately, more satisfied customers.

In addition to helping users and businesses, the system is built to be flexible and scalable. Whether it's applied to e-commerce websites, travel apps, restaurant reviews, or mobile app stores, the core goal remains the same: transform a flood of opinions into a clear, easy-to- understand summary. The technology behind the system can be customized for different domains and languages, making it accessible to a wide range of users and industries.

Another important objective is to maintain accuracy and fairness in summarization. The system is designed to avoid bias by ensuring that both positive and negative sentiments are considered, and that diverse viewpoints are represented. It doesn't just highlight what's popular—it tries to reflect the full range of opinions in a balanced way.

Ultimately, the Review Summarizer System is about making information more accessible and useful. In a world where people are constantly flooded with data, the ability to quickly understand the voice of the crowd is more important than ever. This system aims to bridge the gap between too much information and the need for clarity—helping users save time, make smarter choices, and feel more confident in their decisions.

1.3 EXISTING SYSTEM

The existing systems for handling online reviews are often fragmented and inefficient. Many platforms and businesses still rely on manual methods like reading individual reviews or using basic keyword searches to gauge customer sentiment. Most current review analysis tools focus mainly on generating general statistics, such as average ratings, the number of reviews, or broad sentiment scores. However, these systems often lack the capability to track detailed user opinions, identify specific recurring themes, or provide real-time, context-rich summaries. As a result, they fall short of offering a comprehensive solution for understanding customer feedback at scale.

CHAPTER 2
LITERATURE SURVEY

The development of automated and efficient review summarization systems has become a growing focus for businesses, e-commerce platforms, and content-driven services. These systems streamline the process of analyzing large volumes of customer reviews, improving the overall management, understanding, and utilization of user-generated feedback. The use of emerging technologies such as Natural Language Processing (NLP), machine learning, cloud computing, and AI has significantly enhanced the effectiveness of review summarization tools. In [3], the authors propose a customer sentiment tracking system tailored to product review data. The system collects and analyzes review content, identifying key sentiment indicators and product-specific feedback. This holistic approach enhances customer experience analysis by providing businesses with rich insights into customer satisfaction and areas for improvement.

Another approach to improving feedback interpretation is discussed in [4], where an automated review aggregation and analysis system is introduced. The system automates the collection of review data, applies sentiment scoring, and organizes feedback into actionable categories, significantly reducing the time and effort spent on manual review reading. This not only increases efficiency but also helps businesses better understand customer needs. In [5], the authors explore data management strategies for large-scale review systems. The paper addresses the challenge of handling unstructured review content, emphasizing the importance of text preprocessing and structuring to ensure accurate analysis and smooth system performance.

Cloud-based review monitoring is the focus of [6], where the authors propose a real-time analytics dashboard for tracking review trends across various platforms. This system enables continuous monitoring and offers businesses up-to-date insights on customer sentiment, improving communication and response strategies. A similar focus on real-time processing is seen in [7], where the authors design a dynamic review monitoring tool. By updating sentiment trends in real time, this system ensures that product managers and marketing teams are always aware of shifting customer opinions, aiding in quick

decision-making and issue resolution.

The application of blockchain to secure review authenticity is discussed in [8]. This paper introduces a blockchain-based review system to verify and preserve the integrity of user-generated feedback. By ensuring tamper-proof and traceable data, blockchain enhances trust in online reviews, benefiting both consumers and service providers. In [9], the authors propose an AI-powered review classification system. Using machine learning algorithms, the system classifies reviews into categories like product quality, customer service, and delivery experience, enabling businesses to address specific concerns efficiently.

Predicting customer satisfaction using review data is explored in [10], where predictive models analyze review language and sentiment to forecast future user behavior and satisfaction levels. This assists companies in proactively improving services. In [11], a hybrid decision support system is proposed for users to evaluate products. It combines machine learning with crowdsourced insights to help consumers make informed purchasing decisions based on summarized review content.

AI and cloud integration are discussed in [12], where an intelligent review management system provides real-time summaries and sentiment analysis using scalable cloud infrastructure. The need for centralized, automated review systems is emphasized in [13], where the authors argue that automation improves review accessibility, streamlines analysis, and enhances communication between businesses and customers. A unified review aggregation platform is presented in [14], enabling companies to gather, process, and summarize feedback across multiple channels in real time. Lastly, [15] highlights the importance of systematic data handling in review summarization systems, noting that effective review structuring leads to faster insights and improved service quality.

CHAPTER 3

PROPOSED SYSTEM

3.1 GENERAL

The goal of the proposed system is to manage and automate the process of summarizing user reviews through a single, web-based integrated application. The system addresses the growing need for efficient, accurate, and transparent interpretation of large volumes of customer feedback. It offers a role-based, structured design tailored to three primary user groups: consumers, business analysts, and product managers. Each user accesses the system through a personalized dashboard equipped with features specific to their needs—whether it's quickly viewing summarized sentiments, tracking review trends, or exploring detailed insights into customer experiences. The main objectives of the system include reducing the manual effort required to analyze feedback, improving the accuracy of sentiment interpretation, and providing real-time visibility into customer opinions across multiple platforms. This ensures that all stakeholders—from customers making decisions to businesses refining products—can engage with review data in a meaningful and efficient way.

3.2 SYSTEM ARCHITECTURE DIAGRAM

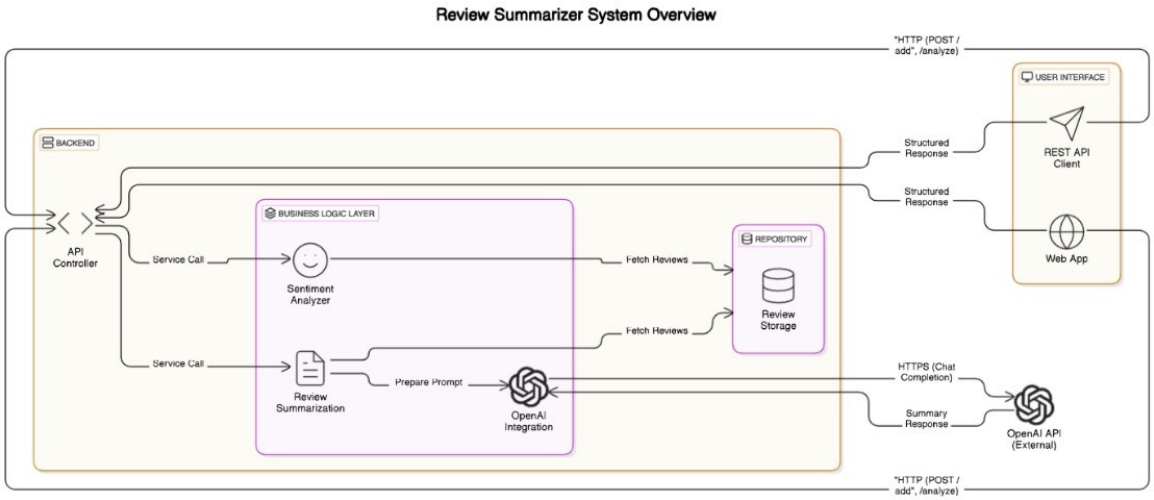
The system's three-tier architecture comprises the user interface layer, backend logic layer, and data storage layer. After authenticating users through a secure login, they are verified and routed to their respective role-based dashboards. Consumers can use the **User Dashboard** to view summarized reviews of products or services, filter summaries by sentiment or category, and explore detailed breakdowns of customer feedback. Business analysts and product managers access the **Analyst Dashboard**, where they can monitor review trends,

generate sentiment reports, and view topic-based summaries that reflect common customer experiences. Through the **Admin Dashboard**, administrators can manage system settings, review flagged content, fine-tune NLP configurations, and oversee user access and data integrity.

The system consists of three core modules: **Review Collection**, which gathers user-generated content from various sources such as e-commerce platforms and feedback forms; **Summarization Engine**, which processes raw text using NLP and machine learning to generate concise, meaningful summaries; and **Insight Tracking**, which helps visualize sentiment over time, identify recurring issues or praises, and monitor brand reputation. All modules are integrated with a central server that ensures secure data synchronization, session handling, and access control.

Fig. 1 illustrates the architecture of the Review Summarizer System, detailing the interaction between users (consumers, analysts, and administrators), authentication services, role-specific interfaces, and core backend modules. Upon authentication, each user type is granted access to their dedicated dashboard, which connects to core system components like the summarization engine, insight tracker, and review management module. These components interact with a centralized database and are orchestrated by the backend server, ensuring reliable data processing, secure handling, and a seamless user experience across all roles

Fig 3.1: System Architecture



3.1 DEVELOPMENTAL ENVIRONMENT

3.1.1 HARDWARE REQUIREMENTS

The hardware specifications could be used as a basis for a contract for the implementation of the system. This therefore should be a full, full description of the whole system. It is mostly used as a basis for system design by the software engineers.

Table 3.1 Hardware Requirements

COMPONENTS	SPECIFICATION
PROCESSOR	Intel Core i5
RAM	8 GB RAM
POWER SUPPLY	+5V power supply

3.1.1 SOFTWARE REQUIREMENTS

The software requirements paper contains the system specs. This is a list of things which the system should do, in contrast from the way in which it should do things. The software requirements are used to base the requirements. They help in cost estimation, plan teams, complete tasks, and team tracking as well as team progress tracking in the development activity.

Table 3.2 Software Requirements

COMPONENTS	SPECIFICATION
Operating System	Windows 7 or higher
Frontend	HTML, CSS, BOOTSTRAP 5
Backend	PHP
Database	MYSQL

3.2 DESIGN OF THE ENTIRE SYSTEM

3.2.1 ACTIVITY DIAGRAM

The activity diagram Fig. 3.2 represents the workflow for managing the review summarization process using an automated Review Summarizer System. The process begins when a user submits a new review or when the system fetches reviews from integrated platforms. The raw review data is stored in the database with a 'Pending' status for processing. The backend summarization engine is triggered, which uses NLP techniques to analyze sentiment, extract key topics, and generate concise summaries. Once the summary is generated, it is marked as 'Processed' and made available for display.

Consumers can then access these summarized reviews through their dashboard, where they can filter summaries by sentiment, category, or product. Business analysts and product teams are notified when new summaries or sentiment trends become available. They can review insights to track customer satisfaction, detect recurring issues, and inform decision-making. If any review data is flagged as irrelevant, spam, or offensive (either by users or automatically by the system), it is marked as 'Rejected' and excluded from summary generation.

This automated and streamlined process ensures fast and accurate interpretation of vast amounts of user feedback, delivering real-time insights, enhancing decision-making, and fostering transparency for consumers, analysts, and administrators alike.

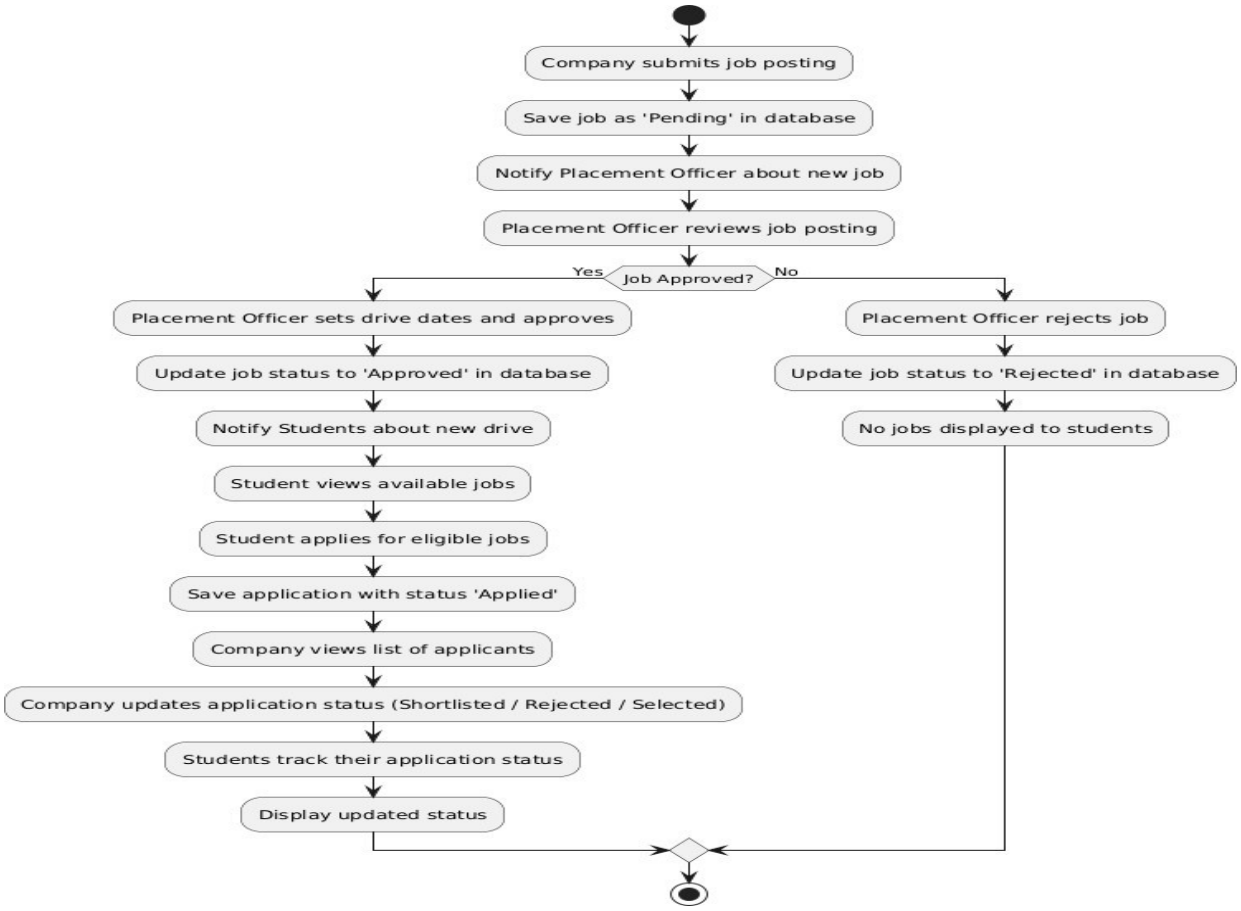


Fig 3.2 Activity Diagram

3.4.2. WORK FLOW DIAGRAM

The workflow diagram Fig. 3.3 outlines the operation of the Review Summarizer System, beginning with the submission of user-generated reviews or the automated fetching of reviews from external sources such as e-commerce sites, apps, or feedback forms. These reviews, containing user feedback, ratings, and textual opinions, are stored in a central database with a “Pending” status. The system then initiates the summarization process and notifies administrators or analysts through a dedicated dashboard. The summarization engine reviews the content using NLP algorithms to analyze sentiment, extract key phrases, detect common themes, and generate concise summaries.

Once processed, reviews are updated in the database with a “Processed” status, and summarized insights become accessible via user dashboards. Consumers can browse summarized reviews for informed decision-making, while analysts and business teams can explore categorized sentiments, detect trends, and identify product-specific feedback. If a review is flagged as spam, irrelevant, or offensive—either by the system or a user—it is marked as “Rejected” and excluded from summaries.

Real-time updates ensure that users, analysts, and administrators receive the most recent and accurate feedback insights. All actions and updates within the system are recorded to maintain transparency, ensure data integrity, and facilitate efficient feedback management. This workflow results in a streamlined and automated approach to understanding and acting on large volumes of customer reviews.

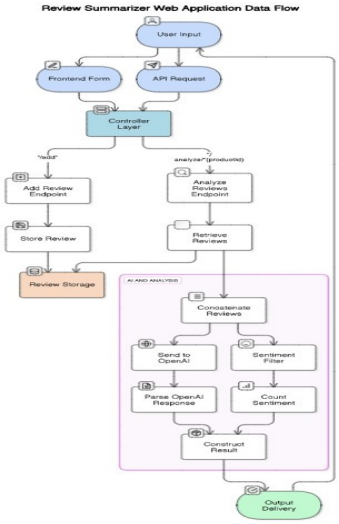


Fig 3.3 Work Flow Diagram

CHAPTER 4

MODULE DESCRIPTION

4.1 SYSTEM ARCHITECTURE

The workflow for the proposed Review Summarizer System is designed to ensure a structured and efficient process for collecting, analyzing, and presenting customer reviews. It consists of the following sequential steps:

4.1.1 USER INTERFACE DESIGN

The sequence diagram Fig. 4.1 illustrates the process of managing user review summarization through the Review Summarizer System. It begins when users submit reviews or when the system automatically fetches external reviews from integrated platforms. These reviews are stored in the system with essential details such as the review text, rating, and source. The backend summarization engine is triggered, which processes the raw text using natural language processing to analyze sentiment and extract key insights. Once the summary is generated, the system updates the review status and stores the summarized output in the database.

Administrators and analysts are notified of new summaries and can access them through a dedicated dashboard for further review or report generation. End-users, such as customers or decision-makers, can view the summarized feedback through their respective dashboards, with the ability to filter by sentiment, topic, or product category. If any review content is flagged as inappropriate or irrelevant, it is reviewed and marked accordingly to prevent it from being included in summaries. The system ensures that all stakeholders receive real-time updates and access to meaningful insights, promoting a transparent, efficient, and streamlined feedback analysis process.

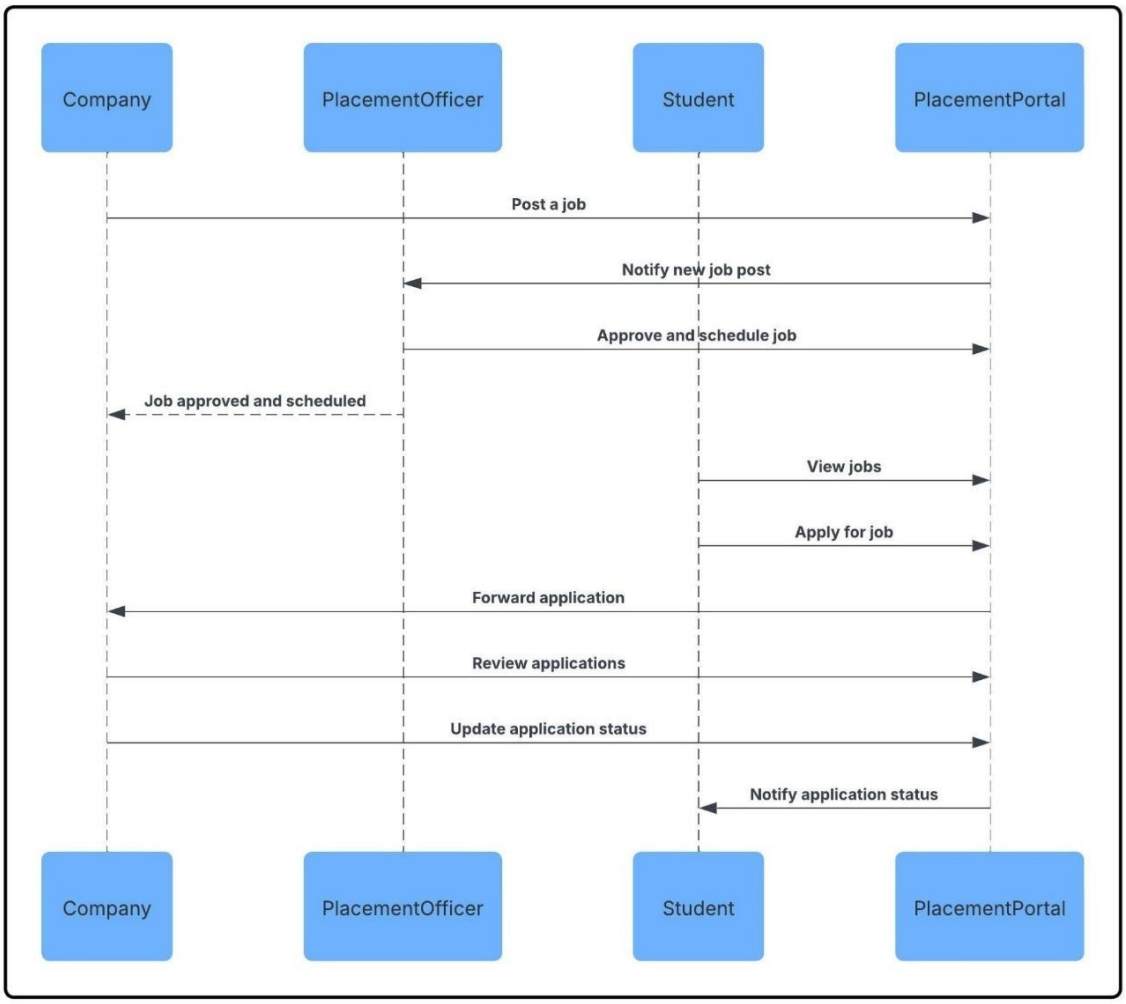


Fig 4.1. Sequence Diagram

4.1.2 BACK END INFRASTRUCTURE

The backend infrastructure of the Review Summarizer System is designed to support secure, role-based access and seamless interaction among users, administrators, and analysts. Built using PHP and integrated with a MySQL database, the backend efficiently manages user authentication, review collection, summary generation, and notification workflows. The architecture ensures strict data integrity and access control, allowing only authorized users to perform specific actions based on their assigned roles. Server-side validation mechanisms are employed to guarantee the accuracy and relevance of the submitted or fetched review content.

The backend also supports real-time updates for newly generated summaries and

integrates with email or push notification services to deliver timely alerts to users about updates or flagged content. This infrastructure provides a robust, scalable, and reliable foundation for efficiently processing large volumes of customer reviews, generating actionable insights, and ensuring a smooth user experience across all levels of the system.

4.2 SYSTEM WORKFLOW:

4.2.1 Company Job Posting:

Content contributors or integrated data sources access the system through a dedicated backend interface or API and submit customer reviews via a structured input format. The submission form or data pipeline captures essential details such as the review text, product or service name, rating, category, and user information (if applicable). Additional metadata, including the source of the review, date of submission, and language, is also recorded. Before being made available to end users, all incoming reviews remain hidden by default to allow the system to process the content through the summarization engine. This ensures that only clean, analyzed, and contextually relevant summaries are generated and displayed after undergoing quality checks and administrative review.

4.2.2 Placement Cell Review and Approval:

Once a review is submitted or fetched, the system notifies the administrator through the dashboard. The administrator accesses the review details and has the authority to approve, modify, or reject the content before it proceeds to summarization. Upon approval, the administrator can configure visibility settings, such as determining when the summarized review will be made available to end-users. Additional parameters—such as content categorization, tagging for product types, and sentiment classification thresholds—are also defined at this stage. If further clarification is required (e.g., unclear context or flagged content), the administrator can initiate communication with the original data source or contributor to ensure accuracy and relevance before proceeding with summarization.

4.2.3 Student Application Portal:

Approved reviews that have passed moderation and summarization become visible to

end-users based on predefined visibility settings and filtering criteria such as product category, rating threshold, or sentiment type. Users log in to their dashboards to view summarized reviews, read condensed feedback, and explore detailed sentiment insights. The system allows users—such as analysts, customers, or business teams—to download or export relevant summaries, access supporting metadata, and optionally view the original review if permitted. All interactions and submissions are securely logged and timestamped to ensure proper data management, accountability, and auditability within the system.

4.2.4 Application Monitoring and Status Updates:

Both system administrators and data analysts have access to a centralized review tracking interface. Analysts or automated components are responsible for updating the processing status of reviews, which may include stages such as "Queued for Summarization," "Summary Generated," "Flagged for Review," "Published," or "Rejected." Administrators can then verify and finalize summaries through an internal content management panel, where tools such as dropdowns or tagging interfaces are provided to confirm sentiment accuracy, relevance, or to mark reviews for reprocessing or exclusion.

CHAPTER 5

IMPLEMENTATION AND RESULTS

5.1 IMPLEMENTATION

The Review Summarizer project is a simple web-based application developed using PHP and MySQL, designed to streamline the process of collecting, analyzing, and summarizing user reviews in an organized and insightful manner. The system is structured into three role-specific dashboards for End Users, Content Moderators, and Administrators, each tailored to their respective functionalities. Review content can either be submitted manually by users or fetched automatically from integrated review platforms. All incoming reviews are initially directed to the moderators, where they are reviewed and either approved for summarization or flagged for issues like spam, irrelevance, or inappropriate content.

Once approved, the system processes the reviews using natural language processing techniques to extract key points and generate concise summaries. Administrators have the ability to configure summary visibility, apply filters by sentiment or category, and oversee the workflow through a centralized interface. End users, upon logging in, can view summarized feedback, filter reviews by product or sentiment, and explore detailed insights in a clean, intuitive layout.

All actions—such as review submissions, moderation, summarization, and notifications—are handled through user-friendly web interfaces for smooth navigation and efficient operation. The project emphasizes a minimalist design while providing core functionality, making it highly extensible for future features like AI-based sentiment prediction, real-time analytics dashboards, and multilingual summarization capabilities.

5.2 OUTPUT SCREENSHOTS

The Review Summarizer Application was developed to enhance the efficiency of analyzing and presenting user feedback for products and services, simplifying the review management process for users, moderators, and administrators. The interface provides tailored dashboards for each user role, streamlining interaction and task execution. Experimental testing scenarios were conducted to evaluate the application's capabilities—starting with review submission and continuing through moderation, automated summarization, and user feedback exploration. Feedback from initial users indicated that the system significantly improved clarity and communication while reducing the manual workload required to interpret large volumes of review data.

Screenshots included in the assignment illustrate key system functionalities, such as how submitted reviews are received and processed, how summaries are generated, and how administrators and users interact with the final output. Figure 4.1 displays the moderator dashboard, where reviews are reviewed, flagged, or approved for summarization. To submit a review, users use the interface shown in Figure 4.2, entering review text, ratings, and related metadata. Once submitted, the system flags the content for moderation as illustrated in Figure

4.3. Approved reviews are passed through the summarization engine, with output visible in a centralized interface shown in Figure 4.4. End-users can explore these summaries in Figure 4.5, filtering them by sentiment, product, or relevance. Moderators and admins can track processing statuses and update records as needed in Figures 4.6 and 4.7, ensuring transparent, real-time content flow from submission to final display.

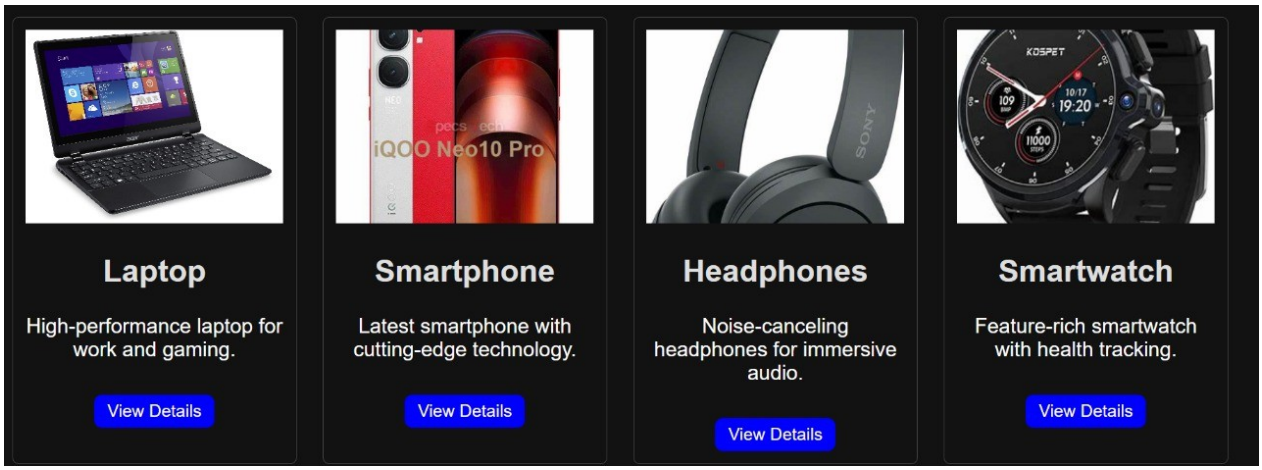


Fig 5.1 Company Dashboard

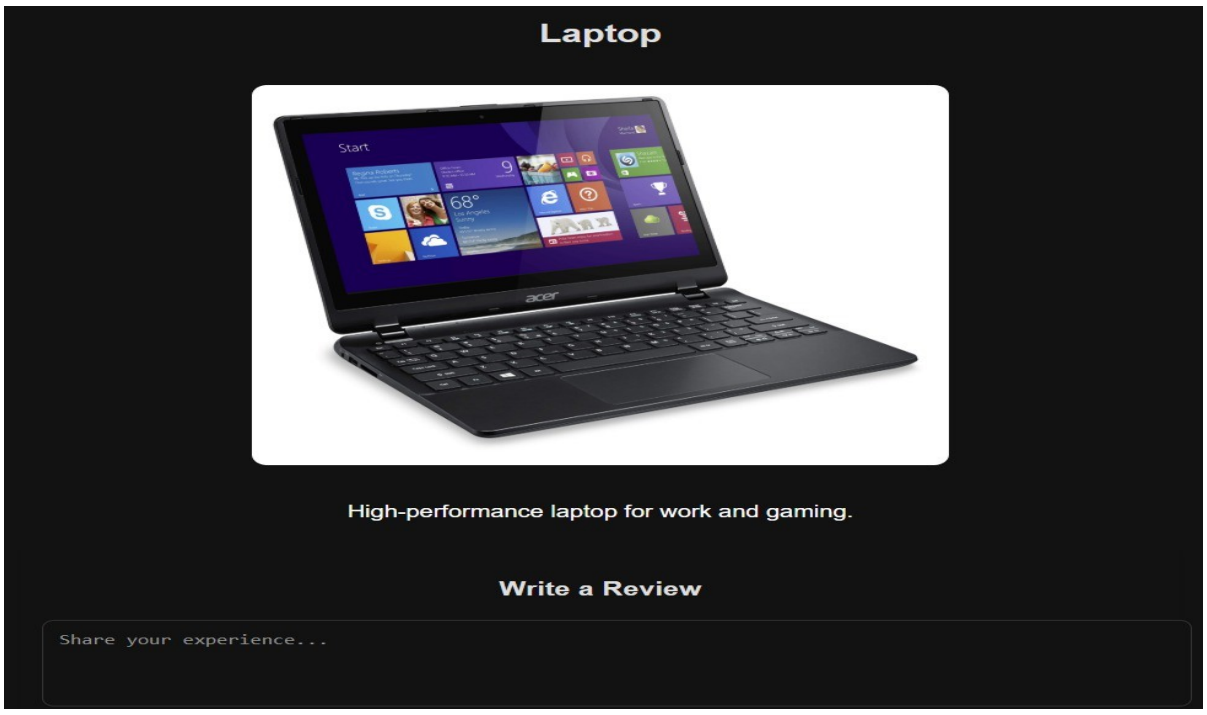


Fig 5.2 Products

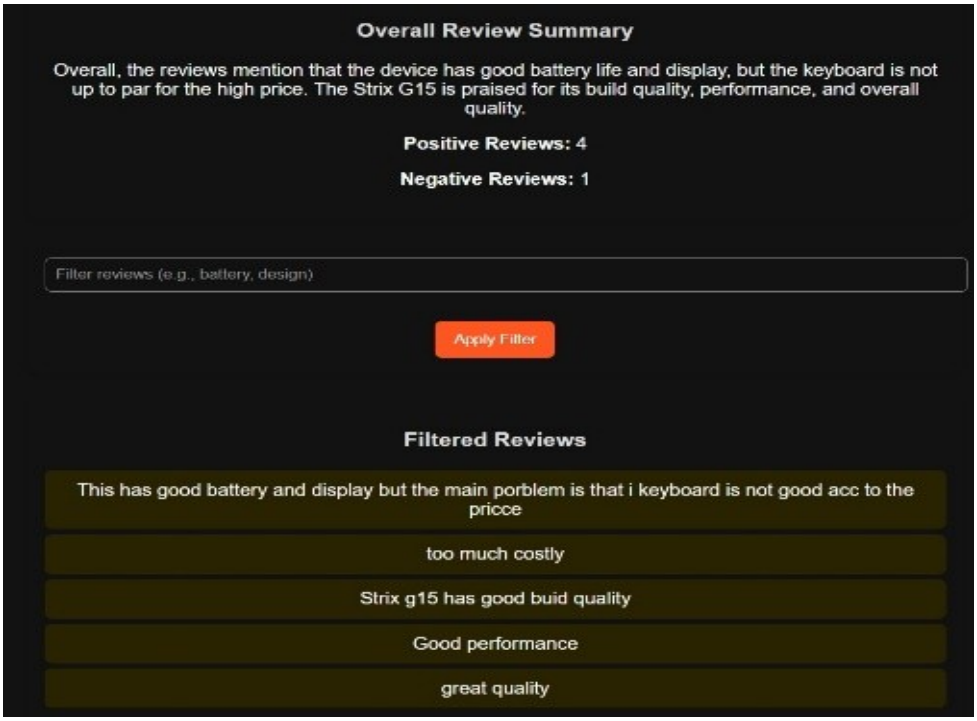


Fig 5.3 The reviews according to the product

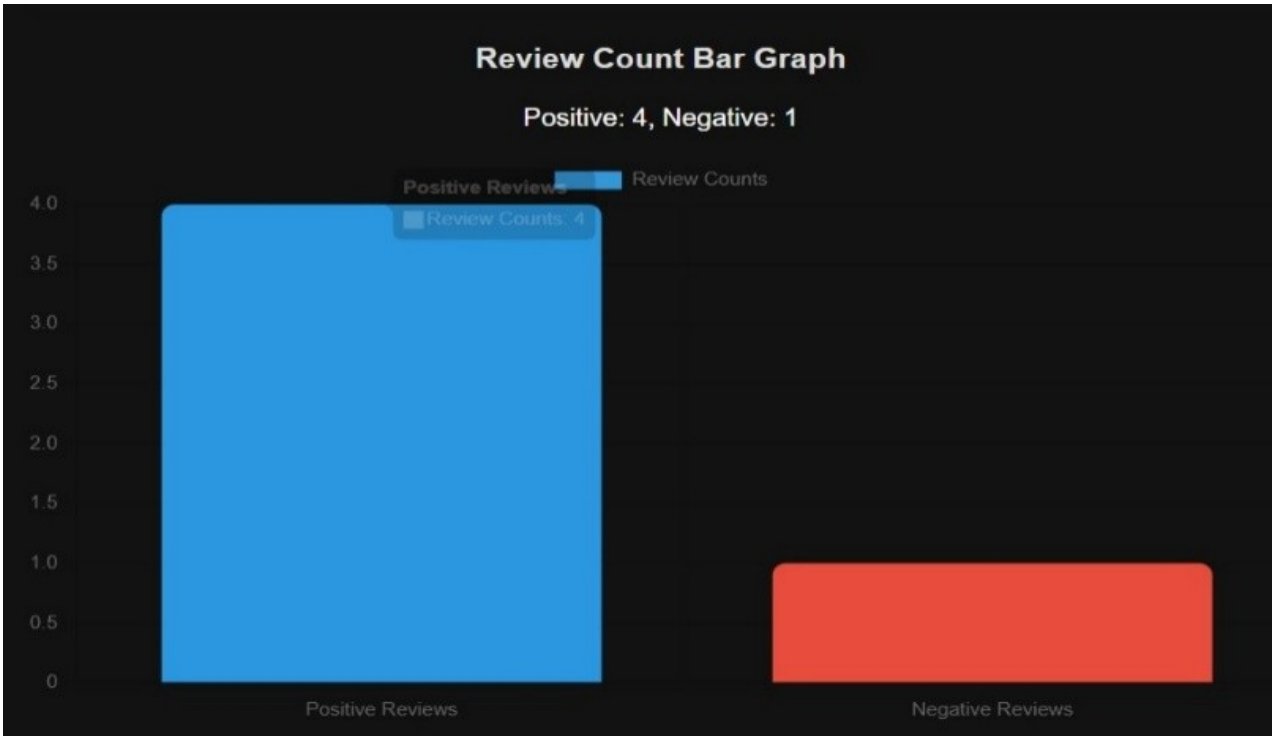


Fig 5.4 review graph

CHAPTER 6

CONCLUSION AND FUTURE ENHANCEMENT

6.1 CONCLUSION

This paper presents details about the development of the Review Summarizer system, designed to automate and enhance the process of analyzing and presenting user-generated reviews. Traditional review management systems often suffer from three major challenges: high manual workload, fragmented moderation processes, and the lack of real-time summarization and insight sharing, all of which limit operational efficiency and user engagement. The Review Summarizer system was developed to offer end users, moderators, and administrators a centralized, scalable platform that streamlines the entire review lifecycle with organized workflows and clear communication channels.

The system incorporates intelligent filtering to categorize and prioritize reviews based on sentiment, relevance, and content quality, enabling users to quickly access meaningful summaries without needing to read through lengthy or repetitive feedback. Moderators can manage and approve content efficiently, ensuring only high-quality, relevant reviews are processed by the summarization engine. Users benefit from real-time status updates on submitted reviews, while the system dynamically generates digestible summaries that reflect general sentiment and recurring themes.

Administrators are provided with visual dashboards and reporting tools to gain insights into user behavior, product feedback trends, and content moderation performance. These tools support data-driven decision-making and content strategy planning. The platform also ensures content integrity and consistency by minimizing manual handling errors through structured data flows and automated validations.

In future iterations, the system may be enhanced with features such as sentiment trend forecasting, integration with resume or user-profile enrichment APIs, and AI-powered recommendation engines for personalized content discovery. By automating the review analysis process and centralizing moderation and reporting, the Review Summarizer system creates a transparent, efficient, and user-friendly solution that transforms how feedback is interpreted and utilized.

6.2 FUTURE ENHANCEMENT

In the future, the Review Summarizer System can be enhanced by incorporating advanced features aimed at improving processing efficiency, usability, and analytical depth. One key improvement would be the integration of an automated content classification engine that pre-processes and filters reviews based on sentiment, relevance, and predefined keyword density before triggering the summarization workflow. This would minimize the need for manual pre-screening and enhance the quality of generated summaries. Additionally, the system could support user profile-driven customization, allowing reviewers to auto-generate structured review templates or summaries tailored to specific products or services.

To improve communication among users, moderators, and administrators, a real-time messaging module could be embedded into the dashboard, enabling instant feedback and dispute resolution for flagged or high-priority reviews. A centralized notification hub can also be developed, integrating email, SMS, and in-app alerts using a messaging queue system to ensure reliable delivery of critical updates across channels.

For deeper insight generation, a visual analytics and reporting module can be implemented using libraries such as Chart.js or D3.js, providing stakeholders with metrics such as review frequency, trending topics, sentiment shifts over time, and reviewer engagement rates. The backend could be extended with support for external data ingestion through APIs, enabling the system to pull reviews from multiple platforms like Amazon, Yelp, or Google Reviews, and store them in a normalized format in the database for summarization.

Furthermore, enabling role-based access control (RBAC) with granular permission sets would allow system administrators to define custom roles for content reviewers, analytics users, or system auditors. A future roadmap could also include deploying a mobile-friendly progressive web application (PWA) and incorporating Natural Language Processing (NLP) enhancements such as entity recognition and sarcasm detection to improve summary precision.

Finally, integrating a feedback mechanism where users can rate or flag summaries based on helpfulness could create a feedback loop for continuous model refinement. These proposed enhancements would significantly improve the system's scalability, flexibility, and effectiveness, making the Review Summarizer a powerful tool for modern feedback management across diverse domains.

REFERENCES

[1] S. Rathi and A. Sharma, “Automation of Placement Process Using Web Applications,” 2021 6th International Conference on Communication and Electronics Systems (ICCES), IEEE, pp. 1608– 1613, doi: 10.1109/ICCES51350.2021.9517309

[2] A. Khalid, H. A. Abbas, A. Al-Khassaweneh, M. E. Kamel, and S. M. Yousif, “Campus hiring using machine learning analytics,” IEEE Access, vol. 11, pp. 52578–52589, 2023, doi: 10.1109/ACCESS.2023.10541560

[3] D. Nandhini, S. Lavanya, and V. Saranya, “Student Tracker System for Training and Placement,” 2023 International Conference on Trends in Engineering, Science and Technology (ICTEST), IEEE,
pp. 1–5, doi: 10.1109/ICTEST56713.2023.10911296

[4] R. Mishra and A. Bhatt, “Automated Job Posting and Recruitment Management System,” 2023 International Conference on Sustainable Computing and Data Communication Systems (ICSCDS),
IEEE, pp. 218–222, doi: 10.1109/ICSCDS56505.2023.10486671

[5] K. M. Shah and S. K. Ghosh, “Data Management for Campus Hiring Systems,” 2014 International Conference on Computing for Sustainable Global Development (INDIACom), IEEE, pp. 472–477, doi: 10.1109/INDIACom.2014.6959916

[6] R. Deshmukh and P. Chaudhari, “Cloud-Based Dashboard for Placement Monitoring in Educational Institutions,” 2022 IEEE International Conference on Cloud Computing in Emerging Markets (CCEM), pp. 1–6, doi: 10.1109/CCEM57254.2022.9711801

[7] A. A. Salunke and M. D. Patil, “Real-Time Application Monitoring for Campus Placement Systems,” 2022 IEEE Pune Section Conference (PuneCon), IEEE, pp. 1–5, doi: 10.1109/PuneCon56177.2022.8783172

[8] N. Yadav, A. Mishra, and V. Sharma, “Blockchain-secured placement record system,” 2023 5th International Conference on Smart Systems and Inventive Technology (ICSSIT), IEEE, pp. 229–234, doi: 10.1109/ICSSIT56714.2023.10717061

[9] M. Kaur and A. Verma, “AI-Powered Resume Screening System for Placement Drives,” 2023 International Conference on Communication, Control and Information Sciences (ICCISc), IEEE, pp. 183–188, doi: 10.1109/ICCISc57936.2023.10525865

[10] N. Sureka, S. Dey, and R. Jyothi, “Student Performance and Employability Prediction using Machine Learning,” 2022 7th International Conference on Communication and Electronics Systems (ICCES), IEEE, pp. 2272–2277, doi: 10.1109/ICCES54183.2022.9752295

[11] S. C. Pandey and V. M. Gadre, “Intelligent Decision Support System for Student Career Choice using Hybrid Approach,” 2017 International Conference on Computing, Communication,
Control and Automation (ICCUBEA), IEEE, pp. 1–4, doi:
10.1109/ICCUBEA.2017.8215664

[12] M. K. Mishra, S. K. Verma, and S. Sharma, “Student Tracking and Monitoring using AI and Cloud,” 2021 6th International Conference on Communication and Electronics Systems (ICCES), IEEE, pp. 2201–2205, doi: 10.1109/ICCES51350.2021.9675548

[13] D. Nandhini, S. Lavanya, and V. Saranya, “Student Tracker System for Training and Placement,” 2023 International Conference on Trends in Engineering, Science and Technology (ICTEST), IEEE, pp. 1–5, doi: 10.1109/ICTEST56713.2023.10911296

[14] A. Kumar and A. Kumar, “Online Recruitment Portal for Academic-Industry Interface,” 2019 IEEE International Conference on Issues and Challenges in Intelligent Computing Techniques (ICICT), pp. 1–4, doi: 10.1109/ICICT46931.2019.8947445

K. M. Shah and S. K. Ghosh, “Data Management for Campus Hiring Systems,” 2014 International Conference on Computing for Sustainable Global Development (INDIACom), IEEE, pp. 472–477, doi: 10.1109/INDIACom.2014.695991

[15] 6