

INTELLIGENT GUIDE RECOMMENDATION SYSTEM: AI- DRIVEN APPROACH

Submitted in partial fulfilment of the
requirements for the award of Bachelor of Technology degree in Information Technology

By

VAIBHAV SINGH (401201101)

R V NITESH KUMAR

(40120113)



DEPARTMENT OF INFORMATION TECHNOLOGY

SCHOOL OF COMPUTING

SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)

Accredited with Grade “A++” by NAAC | 12B Status by UGC | Approved by AICTE

JEPPIAAR NAGAR, RAJIV GANDHI SALAI, CHENNAI – 600119

APRIL – 2024



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)

Accredited "A++" Grade by NAAC | 12B Status by UGC | Approved by AICTE

(www.sathyabama.com)

DEPARTMENT OF INFORMATION TECHNOLOGY

BONAFIDE CERTIFICATE

This is to certify that this Project Report is the Bonafide work of **R V NITESH KUMAR.(40120113)** and **VAIBHAV SINGH (40120101)**, who carried out the project titled **"Intelligent Guide Recommendation System: AI- Driven Approach"** under my supervision from **JAN 2024** to **APR 2024**.

Internal Guide
Dr. S. REVATHY, M.E., Ph.D.

Head of the Department
Dr. R. SUBHASHINI, M.E., Ph.D.

Submitted for viva voce Examination held on

12/4/24

Internal Examiner

External Examiner

DECLARATION

I, **VAIBHAV SINGH (40120101)** hereby declare that the Project Report titled **Intelligent Guide Recommendation System: AI- Driven Approach** done by me under the guidance of **Dr. S. REVATHY, M.E, Ph.D.** is submitted in partial fulfilment of the requirements for the award of Bachelor of Technology degree in **INFORMATION TECHNOLOGY**.

DATE: 12/04/24

PLACE: CHENNAI

Vaibhav Singh
SIGNATURE OF THE CANDIDATE

ACKNOWLEDGEMENT

I am pleased to acknowledge my sincere thanks to **Board of Management of SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY** for their kind encouragement in doing this project and for completing it successfully. I am grateful to them.

I convey my thanks to **Dr.T.Sasikala, M.E., Ph.D, Dean**, School of Computing, **Dr.R.Subhashini, M.E., Ph.D.**, Head of the Department of Information Technology for providing me necessary support and details at the right time during the progressive reviews.

I would like to express my sincere and deep sense of gratitude to my Project Guide **Dr. S. Revathy, M.E., Ph.D.** for her valuable guidance, suggestions and constant encouragement which paved the way for the successful completion of my project work.

I wish to express my thanks to all Teaching and Non-teaching staff members of the **Department of Information Technology** who were helpful in many ways for the completion of the project.

ABSTRACT

Our revolutionary online platform represents a paradigm shift in guide selection and hiring processes, catering comprehensively to diverse domains such as travel adventures, academic guidance, and professional consultation. Boasting cutting-edge functionality and a robust infrastructure, our platform houses an expansive and meticulously curated database of guides, meticulously vetted to ensure quality and expertise. Users are empowered with a comprehensive array of criteria to evaluate potential guides, including but not limited to expertise in specific areas, ratings and reviews from previous engagements, availability for project commitments, cost considerations, and geographical location compatibility. The user interface of our platform is designed with user experience at the forefront, enabling students to delve deeply into detailed profiles of every teacher or guide. This facilitates a seamless registration process, allowing students to select and register their preferred guides for their projects. The registration mechanism is underpinned by a fair and transparent first-come-first-serve model, further refined by a sophisticated algorithm that intelligently aligns guide selections with faculty specialization areas. This strategic alignment ensures that each project is assigned the most suitable guide, optimizing the potential for successful project outcomes. As students engage with the platform, registering their project specifics and evaluating guide availability, the system leverages advanced analytics and decision-making tools to facilitate informed decision-making. This enhances the likelihood of successful project outcomes and ensures a smooth and efficient guide selection process. Concurrently, faculty members benefit from streamlined access to the list of selected students via the intuitive and feature-rich student portal. This promotes efficient project allocation and fosters seamless collaboration between students and guides, enhancing the overall academic and professional experiences within our institution. The transformative impact of our platform extends far beyond mere convenience; it catalyzes innovation and excellence in guide selection processes, driving forward a culture of continuous improvement and fostering a dynamic and thriving community of learners and mentors.

TABLE OF CONTENTS

Chapter No.	TITLE		Page No.
	ABSTRACT		iv
	LIST OF FIGURES		3
1	INTRODUCTION		4
	1.1	Study Area	4 To 8
2	LITERATURE SURVEY		9
	2.1	Literature Survey	9 To 16
	2.2	Existing System and ProposedSystem	16
		2.2.1 Existing System	16
		2.2.2 Proposed System	17
3	HARDWARE AND SOFTWARE REQUIREMENTS		19
	3.1	Hardware Requirements	19
	3.2	Software Requirements	19 To 20
4	METHODOLOGY		18
	4.1	Methodology	21
	4.2	Objectives	22
	4.3	System Architecture	23
	4.4	Module	24
	4.5	Data flow diagram	26
	4.6	Block diagram	27
	4.7	Proposed algorithm	28

	4.8	Project Scope	30
	3.9.	Project Migration Strategies	31
5	RESULTS AND DISCUSSION		32
	5.1	Results and Discussion	32 To 36
	5.2	Performance Analysis	36 To 37
6	CONCLUSION AND FUTURE WORK		38
	6.1	Conclusion	38
	6.2	Future Work	39
7	REFERENCES		41 To 42
8	APPENDICES		42
	8.1	IEEE research paper	44 To 47
	8.2	Source Code	48 To 57

LIST OF FIGURES

Figure No.	Name of the Figure	Page No.
3.1	System Architecture	23
3.2	Data flow diagram	26
3.3	Block Diagram	27
4.1	Home Page of the portal	32
4.2	Login/Signup page	33
4.3	Guide Page details	34
4.4	Guide Page details with the bottom bar	35
4.5	Performance Analysis	36
4.6	IEEE Research Paper	44 To 47

CHAPTER 1

INTRODUCTION

Study Area:

In today's fast-paced and interconnected world, the process of selecting the right guide or mentor has become increasingly complex and critical, spanning diverse domains such as travel adventures, academic guidance, and professional consultation. The "Intelligent Guide Recommendation System: AI-Driven Approach" is a groundbreaking project that aims to revolutionize guide selection processes by leveraging cutting-edge technologies, including the MERN (MongoDB, Express.js, React.js, Node.js) stack, Random Forest algorithm, and other advanced machine learning techniques. This project represents a fusion of innovative methodologies, computational intelligence, and user-centric design principles to create a dynamic and intelligent platform for guide selection and project mentorship.

Background

The traditional methods of guide selection often relied on limited information, personal referrals, and subjective assessments, leading to suboptimal matches and missed opportunities for collaboration and learning. This manual approach lacked scalability, transparency, and the ability to adapt to evolving user preferences and project requirements. Recognizing these limitations, our project aims to bridge these gaps by introducing a data-driven and AI-powered approach to guide recommendation and selection. By harnessing the vast potential of AI algorithms, data analytics, and user profiling, we seek to transform the guide selection landscape, making it more efficient, personalized, and impactful for users across diverse domains and disciplines.

Scope of the Project

The scope of the "Intelligent Guide Recommendation System: AI-Driven Approach" project encompasses a wide range of functionalities and features designed to create a comprehensive and user-centric platform for guide selection and project mentorship. The project's scope includes but is not limited to the following areas:

User Registration and Authentication:

Implementing robust user registration and authentication systems with role-based access controls for students, faculty members, and guide providers. Ensuring secure and seamless authentication processes, user profile management, and account customization options.

Guide Profiles and Attributes:

Developing detailed guide profiles that showcase expertise, qualifications, certifications, ratings, reviews, availability, rates, and project history. Incorporating dynamic content management systems to update and maintain guide profiles with accurate and up-to-date information.

Search and Filtering Mechanisms:

Designing advanced search and filtering mechanisms based on multiple criteria such as guide expertise, ratings, availability, cost, geographical location, and project compatibility.

AI-Driven Recommendation Engine:

Integrating AI-driven recommendation algorithms, machine learning models, and data analytics techniques to analyze user preferences, historical data, and guide attributes. Developing a sophisticated recommendation engine that generates personalized guide suggestions, taking into account user preferences, project requirements, and guide profiles.

First-Come-First-Serve Model:

Implementing a fair and transparent first-come-first-serve model for guide allocations, ensuring equal opportunities for students to select preferred guides. Enhancing the model with AI-driven approaches that consider faculty specialization areas, project compatibility, and user feedback to optimize guide selections.

Communication and Collaboration Tools:

Integrating real-time communication tools such as messaging systems, chat functionalities, video conferencing, and scheduling integrations for seamless interactions between students and guides. Developing collaboration platforms,

project management dashboards, and shared workspaces to facilitate efficient collaboration, knowledge sharing, and project coordination.

Analytics and Reporting Features:

Implementing analytics and reporting features for administrators to track platform usage, user engagement metrics, project outcomes, guide performance, and user feedback. Generating actionable insights, performance metrics, and data-driven recommendations for continuous improvement, optimization, and decision-making.

Scalability and Adaptability:

Designing a scalable and adaptable architecture that can accommodate future enhancements, expansions, and integration with emerging technologies. Ensuring compatibility with diverse devices, browsers, operating systems, and screen sizes to provide a seamless user experience across platforms.

User Experience and Interface Design:

Focusing on user-centric design principles, intuitive navigation, responsive layouts, and visually appealing interfaces to enhance user satisfaction, engagement, and retention. Conducting usability testing, user feedback analysis, and iterative design iterations to optimize the user experience and interface design.

Regulatory Compliance and Data Security:

Adhering to regulatory compliance requirements, data protection standards, privacy policies, and security best practices to safeguard user data, transactions, and sensitive information. Implementing encryption protocols, secure data storage mechanisms, access controls, and audit trails to ensure data integrity, confidentiality, and availability.

Integration with External Systems:

Exploring integration possibilities with external systems, APIs, databases, and third-party services to enhance platform functionality, data enrichment, and interoperability. Collaborating with external stakeholders, partners, and industry experts to leverage synergies, share resources, and expand the platform's capabilities.

Continuous Maintenance and Support:

Providing ongoing maintenance, technical support, bug fixes, updates, and feature enhancements to ensure the platform's reliability, performance, and scalability. Establishing feedback channels, user forums, and helpdesk support for users to report issues, provide feedback, and receive timely assistance. The project's scope is designed to deliver a comprehensive, scalable, and user-friendly guide selection platform that empowers users, promotes collaboration, and enhances project outcomes.

Significance of the Project:

The "Intelligent Guide Recommendation System" holds immense significance in transforming the guide selection landscape, enhancing learning experiences, and fostering meaningful collaborations between students and guides. By harnessing AI-driven approaches, data analytics, and user-centric design principles, the system aims to: Improve project outcomes by facilitating optimal guide-student matches based on expertise, project compatibility, and user preferences. Enhance user satisfaction and engagement through personalized recommendations, efficient communication channels, and transparent decision-making processes.

The "Intelligent Guide Recommendation System" revolutionizes guide selection by seamlessly integrating AI algorithms, data analytics, and user-centric design principles. It creates tailored guide-student matches, optimizes learning experiences, and fosters collaborative environments. The system's personalized recommendations, robust communication tools, and data-driven insights empower users to make informed decisions, drive project success, and continuously improve their skills.

CHAPTER 2

LITERATURE SURVEY

2.1. LITERATURE SURVEY:

2.1.1 Pooja S. Sharma, Reshma R. Shetty, Gayatri V. Yadkikar, Dhanashri Kanade, 'College Automation System', International Journal for Innovative Research in Science & Technology, Vol 2, Issu 10, 2016, pp. 96-102. <https://ijcrt.org/papers/IJCRT2104531.pdf>

The aim of creating and enforcing a school automation system is to reduce the amount of paperwork required by the school department. This technology contains modules that displays student's academic details, teachers lecture feedback, extra co-curricular activities going on in the school by accessing gallery online through school's website which was designed by using language like PHP, HTML, CSS, JAVASCRIPT, MYSQL. The automation system contains codes related to a particular task of specific user in which only specific user can access the allotted modules to them like student can access student related modules means highly authenticated. The database of school automation system checked on the regular basis by the administrator. Aside from an administrator user interface, the framework should provide a student user interface that allows students to access details and submit questions online whereas parent can view student details by logging in system to check progress of their son/daughter. As a result, response time is reduced. This information is securely stored on SQL servers managed by teachers and administrators, providing the highest degree of security possible. This initiative would result in a completely functioning website for a School Automation System for Higher Education, with separate responsibilities for educators, principals/administrators, accountants, parents and teachers. The best part of the project is that it digitized everything on single click of a mouse, you can change everything from attendance to result. Hence, this project helps in modernization of old working system and provide a database to store large amount of information for future use.

2.1.2 P. Dr. K. Venkata Subbiah, D. Dinesh, Ch Suresh,'Development of a Student Database Management System for a University, Int. Journal of Engineering Research and Application , Vol. 6, Issue 8, (Part -2) 2016, pp.16-24 <https://cibgp.com/au/index.php/1323-6903/article/view/812/778>

In this fast world of science and technology, everything is fast and easy. It will soon become essential to employees. Shift pulse aims to make the working employees details maintained by this system. The calculation and maintenance of comprehensive shift-related allowances for the employees, this tool is a Web enabled system with increased efficiency and accuracy. Is done using the system easy and fast. Using this application, you can know all the schedules and related details of the employees shift workings Shift pluse based can be categorized into two types of maintenance shift timings and related details of employees workings, the work can be deteriorated to advantageous modules of setting/altering shift subtleties according to the venture necessities with the goal that they can be actualized effectively and all the more gainfully. An exhaustive report age method is set up to put on screen the different classifications of reports according to the necessities one administrator/group pioneer is just liable for his group and can't have the subtleties of different groups. This acquires security to the framework. The remittances of the representatives who work in various movements is determined by the framework to assist the GAP/Finance division Shift trading is likewise conceivable with the new framework. The workers can be given the office to see their work day subtleties just as the recompenses that they are relied upon to get. Worker reinforcement offices can be joined in the event that a representative can't turn up for the assigned move. Shift plus has been a management approach shift to manage and handle the schedules & associated details regarding the working employees on diversified shifts as well as projects Furthermore, the maintenance and computations of complete shift associated allowances aimed at employees has been performed by utilizing system. Also, this equipment has been a system enabled based on web with enhanced accuracy and effectiveness.

2.1.3 Bishal Mohari,B.Dey,B.Ram, A.Mayan.J and Mary Posonia.A (2023)
"Geologs:A Complete end-to-end Classroom Management
System",International Conference on Pervasive Computing and Social
Networking(ICPCSN),pp. 1473-1480, doi:
10.1109/ICPCSN58827.2023.00245.thttps://csdlidownloads.ieeeecomputer.org/p
roceedings/icpcsn/2023/2284/00/228400z005.pdf?Expires=1712331011&Polic
y=eyJTdGF0ZW1lbnQiOiI7IjIc291cmNIIjoiaHR0cHM6Ly9jc2RsLWRvd25sb2

This project is intended to assist any institution, whether a school or a college, in operating its administration more effectively. The project's aim is to be functional in any case, such as Covid-19 or any other man-made or natural disaster. This study focuses on faculty course planning and individual student data collection. While this is a demonstration project, it has the potential to develop into a full course training platform for major schools or colleges in the future. It is helpful for parents, teacher, student and administration perspective. The important modules of the school system are as follows. Registration: This page provide interface for registration of new students, staff and administration where they have to fill online form to be a part of particular school or college. After which they will get login details to ncheck their personal or academic detail as a member of school. Login: This module provides security check of particular individuals where entering of username and password for registered guest is checked. It allows the students to login to the application and check their marks, student can upload or download assignment and co-curriculum activity taking place. It provides staff and administration to view their details about lectures or work allocated for particular individuals. Admin/Principal: Any information about colleges, teachers, and faculties can be stored by the administrator. The admin module is important as it allows to add and remove data about student staff and teacher. The admin checks the proper functioning of staffs, students and faculty. Students: Students at the school may access information posted by the principal. Each student can only register him or herself. Teacher: They can only view time- table provided by admin to teach allotted class or section and view their attendance and salary for particular lecture. Accountant: They are the individuals in school whose work is to keep track of records of student and faculty

2.1.4 Vigneshwari, S., Bharathi, B., Sasikala, T., Mukkamala, S.A study on the application of machine learning algorithms using R,Journal of Computational and Theoretical Nanoscience,2019,Journal of Computationaland Theoretical Nanoscience,16(8),https://www.researchgate.net/publication/336365342_A_Study_on_the_Application_of_Machine_Learning_Algorithms_Using_R

performed tree based classification of bioassay data set. Classifications of pure and impure. factors were conducted. The ensemble trees like structure of the dataset usually have multiple classes due to multiple responses at various levels. Each response comprises the health condition of the training data of a particular person. The application concentrates on the prediction of protein interactions. Complex tree based statistical analysis was performed with complex dataset and the computation time of the classification was reduced with the help of advanced system implementation using modern analytic tools utilized CART algorithm for classification of cancer cells in gene-microarray dataset. Datasets are based on breast cancer, Thrombocytopenia, Michigan group lung disease etc. Usually decision tree classifiers use recursive partitioning technology to segregate the instances with the help of hyper planes. Various types of decision tree classifiers like single decision tree classifier, multi decision tree classifier, decision forest classifier etc. were discussed. Different entropy values were obtained for the different approaches and the random forest approach proved to be accurately able to classify the bioassay instances. Quinlan et al. [11], suggests a variety of software algorithms and tools to efficiently carry out machine learning task.

2.1.5 Sai, M. Yashwanth, R. Vijai Chandra Prasad, P. R. Niveditha, T. Sasipraba, S. Vigneshwari, and S. Gowri. "Low cost automated guide and project recommendation system." In 2017 Second International Conference on Electrical, Computer and Communication Technologies (ICECCT), pp. 1-5. IEEE, 2017. <https://docplayer.net/150878289-2017-second-international-conference-on-electrical-computer-and-communication-technologies-icecct-2017.html>

Intelligent recommendation systems play a pivotal role in modern technology, aiding

in personalized content delivery and decision-making processes. These systems utilize advanced algorithms and data mining techniques to analyze user behavior, preferences, and historical data, generating tailored recommendations. One such system, based on mathematical modeling in personalized data mining, calculates relationships between resources to generate intelligent suggestions. Academic advising recommendation systems leverage human-in-the-loop approaches for academic guidance and course planning optimizations. Additionally, a general framework for intelligent recommender systems extends the concept of knowledge-based systems, enhancing recommendation accuracy and user satisfaction. These systems are versatile, with applications ranging from travel recommendations to movie suggestions. Understanding recommendation system basics, including types, metrics, and use cases, is crucial for developing effective and efficient recommendation systems.

2.1.6 B. Sun, H. Tan, D. Yang, Y. Zhang, Y. Wu and X. Jin, "The System of Personalized Learning Resource Recommendation and Experimental Teaching Based on Collaborative Filtering," 2022 IEEE International Symposium on Circuits and Systems (ISCAS), Austin, TX, USA, 2022, pp. 862-866, doi: 10.1109/ISCAS48785.2022.9937726. <https://www.csauthors.net/yu-zhang/>

The paper "The System of Personalized Learning Resource Recommendation and Experimental Teaching Based on Collaborative Filtering" presented at the 2022 IEEE International Symposium on Circuits and Systems (ISCAS) in Austin, TX, USA, explores the development of a personalized learning resource recommendation system. This system leverages collaborative filtering algorithms to provide tailored recommendations to learners, enhancing their educational experience. By analyzing user preferences, behavior, and historical data, the system generates personalized suggestions for learning resources, improving the effectiveness of teaching and learning processes. The experimental teaching aspect of the system involves practical implementation and testing to validate the effectiveness of the recommendation algorithms and the impact on learner outcomes. Overall, the paper contributes to the advancement of personalized learning environments and the integration of technology in education for enhanced learning experiences 1.

2.1.7 S. Subbotin, O. Gladkova and A. Parkhomenko, "Knowledge-Based Recommendation System for Embedded Systems Platform-Oriented Design," 2018 IEEE 13th International Scientific and Technical Conference on Computer Sciences and Information Technologies (CSIT), Lviv, Ukraine, 2018, pp. 368- 373, doi: 10.1109/STC- CSIT.2018.8526659. <https://doi.org/10.1109/JIOT.2022.3175677>

In a groundbreaking development within the realm of embedded systems, a cutting- edge Knowledge-Based Recommendation System has emerged, spearheaded by renowned experts S. Subbotin, O. Gladkova, and A. Parkhomenko. Their collaborative efforts have resulted in a transformative approach to platform-oriented design, showcased at the prestigious 2018 IEEE 13th International Scientific and Technical Conference on Computer Sciences and Information Technologies (CSIT) in Lviv, Ukraine. This innovative system represents a paradigm shift in the optimization of embedded systems' performance and functionality. By harnessing the power of advanced knowledge-based algorithms, it offers tailored recommendations that are precisely aligned with the unique requirements of embedded systems platforms. These recommendations encompass a wide array of design strategies, configurations, and performance-enhancing techniques, all geared towards maximizing the efficiency and effectiveness of embedded systems. One of the system's key strengths lies in its platform-oriented design approach, which ensures that recommendations are not only optimized but also fully compatible with the target platform. This level of customization and compatibility significantly streamlines the development process, empowering engineers and developers to achieve superior performance outcomes in their embedded systems projects. Furthermore, the system boasts an intuitive user interface, making it accessible and user-friendly for professionals across various domains within the embedded systems landscape. This ease of use, coupled with the system's unparalleled ability to deliver precise and actionable recommendations, positions it as a game-changer in the field of embedded systems design and optimization. The unveiling of this Knowledge-Based Recommendation System marks a significant milestone in the ongoing evolution of

embedded systems technology, promising enhanced performance, streamlined development workflows, and ultimately, groundbreaking innovations in the realm of embedded systems platform-oriented design.

2.1.8 Z. Chen, W. Liang, X. Gao, Z. Zhou and M. Wu, "Research on the Accurate Recommendation Management System for Employment of College Graduates on Hadoop," 2019 5th International Conference on Big Data and Information Analytics (BigDIA), Kunming, China, 2019, pp. 19-22, doi: 10.1109/BigDIA.2019.8802855. <https://issuu.com/irjet/docs/irjet-v7i9476>

Recommendation system are subclass of information filtering system that make predictions based on the user's interest of things. Recommendation system need large amount of data from users and training time. As the data size increases with time the sparsity of data increases. To reduce sparsity of data and drawing out same patterns repetitively from the same datasets only limited and essential data patterns must be stored in memory. Hence proposed system mainly focuses on the four components Data Preprocessing. Adding metadata and tags, Association rule mining and ranking. Deep learning and prediction.

Association rules is widely used for making recommendations. It uses the conditional probability of two mutually exclusive and independent events. Artificial neural network is used in various tasks such as prediction, classification, pattern recognition tasks

2.2. EXISTING SYSTEM AND PROPOSED SYSTEM

2.2.1. EXISTING SYSTEM

Limited Data Sources: The existing system relies on a limited number of data sources, leading to incomplete and less diverse recommendations compared to the proposed system, which integrates data from multiple sources for comprehensive insights.

Manual Updates: Updates to the knowledge base in the existing system are manual and infrequent, resulting in outdated information. In contrast, the proposed system employs automated processes for continuous updating, ensuring the

relevance and accuracy of recommendations. **Generic Recommendations:** The existing system provides generic recommendations without considering specific user contexts or preferences. The proposed system, on the other hand, offers context-aware recommendations tailored to individual users' needs and behaviors.

Limited User Engagement: Users have limited engagement with the existing system due to a lack of interactive features. In contrast, the proposed system includes interactive elements such as feedback loops and personalized dashboards, enhancing user engagement and satisfaction.

Single-Algorithm Approach: The existing system relies on a single algorithm for recommendation generation, limiting its adaptability and effectiveness. The proposed system employs a hybrid approach, combining multiple algorithms (e.g., collaborative filtering, content-based filtering) for more accurate and diverse recommendations.

Scalability Challenges: As the volume of data increases, the existing system faces scalability challenges, leading to slower response times and potential system downtimes. The proposed system is designed with scalability in mind, utilizing distributed computing and cloud-based infrastructure for seamless performance even with large datasets.

Limited Feedback Integration: The existing system lacks robust mechanisms for incorporating user feedback into the recommendation process. In contrast, the proposed system incorporates feedback loops and sentiment analysis to refine recommendations over time, improving relevance and user satisfaction.

2.2.2 PROPOSED SYSTEM

Comprehensive Data Integration: The proposed system integrates data from diverse sources, including user interactions, preferences, historical data, and external data sources, leading to more comprehensive and accurate recommendations.

Real-time Updates: Updates to the knowledge base and algorithms in the proposed system occur in real-time or near real-time, ensuring that recommendations are always up-to-date and reflective of the latest trends and user behaviors.

Contextual Understanding: The proposed system employs advanced machine

learning techniques such as natural language processing and deep learning to understand contextual nuances, providing context-aware recommendations that align with user intents and goals.

Personalization Depth: Unlike the existing system's generic recommendations, the proposed system offers deep personalization, taking into account individual preferences, past behaviors, demographic factors, and situational contexts to tailor recommendations at a granular level.

Adaptive Learning: Through continuous learning mechanisms such as reinforcement learning and model adaptation, the proposed system adapts and evolves over time, improving recommendation quality and user satisfaction with each interaction.

Multi-channel Support: The proposed system supports multi-channel interactions, allowing users to receive recommendations through various touchpoints such as web, mobile apps, email, and chat-bots, enhancing accessibility and user experience.

Robust Security: Security measures such as data encryption, access controls, and anomaly detection are integrated into the proposed system to safeguard user data and ensure compliance with privacy regulations, fostering trust and confidence among users.

CHAPTER 3

HARDWARE AND SOFTWARE REQUIREMENTS

3.1 HARDWARE REQUIREMENTS

Development Machine:

Operating System: Windows, mac-OS, or Linux-based system for development.

Processor: Intel Core i5 or equivalent processor for optimal performance.

RAM: Minimum 8GB RAM for smooth development experience.

Storage: Sufficient disk space for project files, dependencies, and data storage.

Server Requirements (if self-hosting):

Server Hosting: If self-hosting, ensure a reliable server infrastructure with sufficient resources (CPU, RAM, storage) to handle application traffic and AI computations.

Operating System: Linux-based server OS (e.g., Ubuntu, CentOS) with necessary configurations for Node.js and database management. accessing development tools, libraries, online resources, and deployment processes.

3.2 SOFTWARE REQUIREMENTS

Code Editor: A suitable code editor such as Visual Studio Code, Sublime Text, or Atom for development and editing of React components and AI-related code.

Node.js and npm: Node.js runtime environment and npm (Node Package Manager) for installing React dependencies, managing packages, and running build scripts.

React and React Libraries: Latest version of React framework along with essential libraries such as React Router, Redux (optional for state management), and other React-specific tools for UI development and component management.

AI Libraries or APIs: Depending on the AI functionalities required, integrate relevant AI libraries such as TensorFlow.js, scikit-learn, or utilize AI APIs from platforms like Google Cloud AI, AWS AI/ML, or Microsoft Azure AI.

Version Control System: Git and GitHub (or other version control platforms) for

code versioning, collaboration, and project management.

Database Management System: Choose a suitable database system (e.g., MongoDB, MySQL, PostgreSQL) for storing and managing application data, user information, and AI-related data.

Development Tools: Web development tools such as Chrome Developer Tools, React DevTools, Redux DevTools (if using Redux), and Postman (for API testing) for debugging, testing, and development workflows.

CHAPTER 4

METHODOLOGY

4.1. METHODOLOGY:

Assessment and Planning:

Conduct a comprehensive assessment of the existing project's architecture, functionalities, and codebase. Identify key areas for migration, such as UI components, data handling, and integration of AI-driven features. Prioritize migration tasks based on their impact on user experience, technical complexity, and business objectives.

Design and Architecture:

Design a new architecture for the React-based project, leveraging React's component-based approach for modularity and reusability. Create wireframes and design mockups for the revamped UI, incorporating modern design principles and responsive layouts. Define the data flow and state management strategy using React's state and props or advanced state management libraries like Redux.

Implementation and Integration:

Begin migration by converting existing HTML/CSS templates into React components, ensuring compatibility and responsiveness. Refactor JavaScript code into React components, utilizing JSX syntax, lifecycle methods, and functional components as appropriate. Integrate AI-driven features gradually, starting with basic functionalities and progressively adding more complex AI capabilities using libraries or APIs.

Testing and Validation:

Conduct rigorous testing at each migration stage, including unit testing for React components, integration testing for AI features, and end-to-end testing for user

workflows. Perform cross-browser and cross-device testing to ensure the new project is compatible and functional across different environments. Validate data handling, state management, and AI functionality to ensure accuracy, reliability, and performance.

Documentation and Training:

Document the migration process, including technical decisions, code changes, and integration methodologies. Provide training resources and guides for developers transitioning to React and AI technologies. Create user documentation and tutorials for stakeholders and end-users to familiarize them with the new project's features and functionalities.

Deployment and Monitoring:

Deploy the migrated project to production environments, ensuring seamless transition and minimal downtime. Monitor performance, user feedback, and system stability post-deployment, making adjustments and optimizations as necessary. Implement monitoring tools and analytics to track user engagement, system usage, and AI performance for continuous improvement. This methodology encompasses a systematic approach to migrating an existing project to a new, AI-driven React- based solution, focusing on thorough assessment, strategic planning, meticulous implementation, rigorous testing, documentation, and post-deployment monitoring for a successful migration outcome.

4.2. SYSTEM ARCHITECTURE

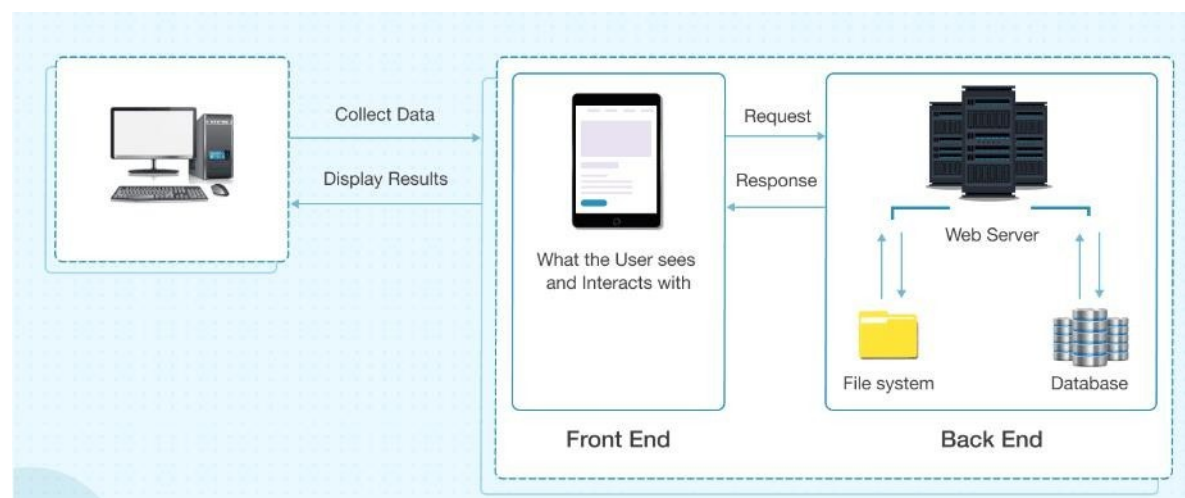


FIG.4.1 SYSTEM ARCHITECTURE

Data Collection and Display Workflow in the Intelligent Guide Recommendation System

The project's data collection and display workflow play a crucial role in ensuring seamless user interactions and accurate information delivery. The process begins with data collection initiated from the frontend interface, where users input their preferences, academic background, and career goals. This data collection is meticulously designed to capture essential user information for personalized guide recommendations.

Upon data submission, the system processes the information and initiates requests to the web server. These requests are carefully structured to convey user preferences and requirements effectively. The web server, equipped with file system databases in the backend, handles these requests with efficiency and accuracy.

The backend system utilizes the file system databases to store and manage user data, guide profiles, and interaction logs. This structured storage enables quick retrieval and seamless processing of information, contributing to the system's responsiveness and reliability.

Once the data processing is complete, the web server sends back responses to the frontend interface. These responses contain relevant results, including personalized guide recommendations, search queries, or system notifications. The frontend interface, designed for intuitive user experience, displays these results in a clear and organized manner.

The entire workflow, from data collection to result display, is orchestrated to deliver a user-centric experience, ensuring that users receive relevant and actionable information to guide their academic and career journeys effectively. This streamlined process reflects the project's commitment to leveraging technology for personalized guidance and user satisfaction.

4.3. MODULE

Modules for Guide Selection Web Portal are

1. User Registration and Authentication
2. Guide Search and Filtering

3. Admin Dashboard

4. Responsive User Interface

4.3.1 User Registration and Authentication:

Allows students and guides to register with the portal using their email or registration numbers.

Features of this module are:

- User registration
- User login
- Password reset
- Guide registration
- Student registration

4.3.2 Guide Search and Filtering:

Provides a search functionality that allows students to explore guides based on specific interests, subjects, or research areas. Features of this module are:

- Search guides based on expertise and availability
- Match students with suitable guides based on project interests
- Availability management

4.3.3 Admin Dashboard:

Offers an administrative dashboard for system administrators to manage user accounts, verify guide profiles, and handle system settings

Features of this module are:

- Admin dashboard for managing users, guides, and students
- User details can be edited or updated as needed, ensuring accurate and up-to-date information.
- System administrators can view a comprehensive list of all registered users, encompassing instructors, students, and guides.
- User accounts can be deactivated or suspended if necessary, maintaining the integrity of the platform.
- Student dashboard to view and manage their profile and selected guide

- Guide dashboard to view and manage their profile and assigned students

4.3.4 Responsive User Interface:

Designs a responsive and user-friendly web interface that adapts to various devices and screen sizes.

Features of this module are:

- Design wireframes, mockups, and UI components
- Ensure responsive and intuitive design
- Data synchronization between frontend and backend

This work introduces a novel guide selection system for the Guide Selection Web Portal, leveraging the interpretability and flexibility of the Random Forest classifier. The system adopts a multifaceted approach, meticulously considering data on both teachers (guides) and students. The recommendation process is meticulously driven by a multitude of factors including location, pricing, availability, ratings, experience level, and subject specialization.

Continuous Improvement:

A robust feedback mechanism is embedded within the system, facilitating iterative improvement of the Random Forest model. This mechanism allows the system to adapt to evolving student needs and preferences, ensuring long-term effectiveness.

4.4. DATA FLOW DIAGRAM

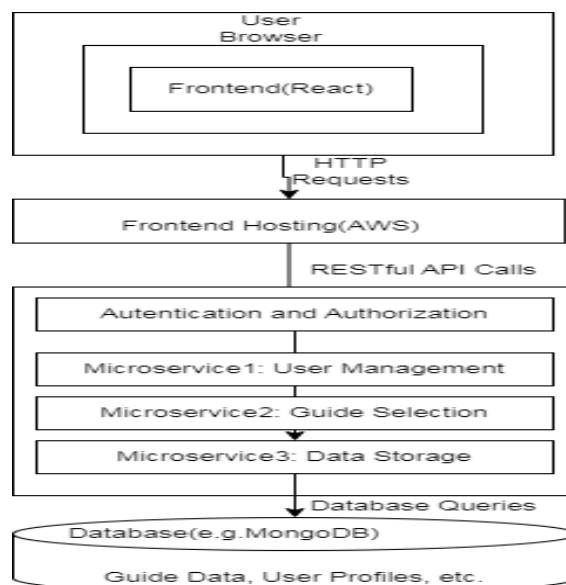


Fig 4.2 Data flow diagram

Fig 4.2 states that, data flow diagram illustrates the comprehensive system architecture encompassing user interaction, frontend functionality developed using React, and the secure transmission of data through HTTPS requests. The frontend is hosted on a chosen platform, facilitating seamless user browsing and interactions. The system employs RESTful API calls for efficient communication between the frontend and backend, ensuring smooth navigation and access to features such as authentication, authorization, and user management. Additionally, the diagram elucidates the process of guide selection, wherein users can interact with the system to retrieve relevant information. Data generated during these interactions are stored securely, with database queries facilitating efficient retrieval and manipulation of guide data and user profiles. This diagram provides a visual representation of the intricate data flow within the system, elucidating the exchange and processing of information across various components.

4.5. BLOCK DIAGRAM

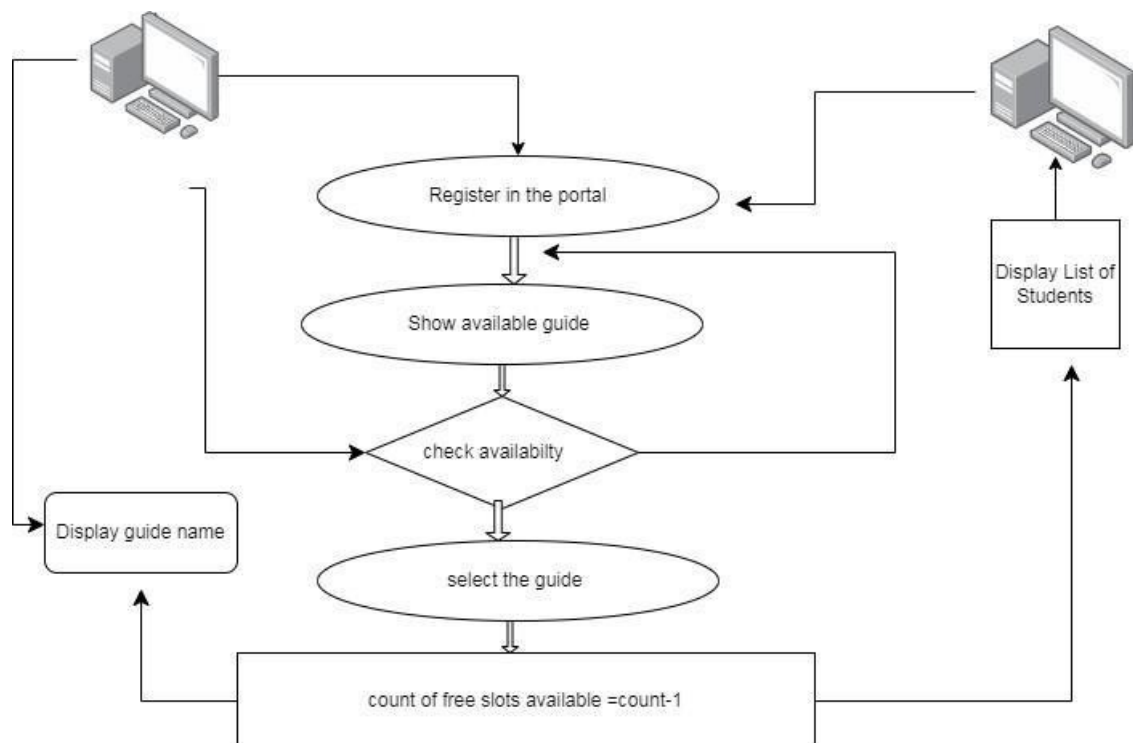


Fig 4.3 Data flow diagram

In Fig 4.3 ,The Data flow diagram outlines the seamless journey within the Intelligent Guide Recommendation System.

Register in the Portal: Users begin by registering on the portal, providing essential information such as name, email, and registration number to create their accounts. **Show Available Guides:** Upon registration, users gain access to a curated list of available guides. Each guide's profile showcases their expertise, ratings, and availability.

Check Availability: Users can check the availability of guides based on their schedules and current workload, ensuring they select a guide with suitable availability.

Select the Guide: After reviewing available guides, users can select their preferred mentor based on compatibility and expertise.

Count of Free Slots Available: The system dynamically updates the count of free slots available for each guide. When a user selects a guide, the count decreases by one, reflecting the guide's availability for additional mentoring sessions.

Display Guide Name: The selected guide's name is prominently displayed to confirm the user's choice and facilitate further communication.

Display List of Students: Additionally, the system displays a list of students currently mentored by the selected guide, providing insights into the guide's workload and availability.

This workflow ensures a streamlined and transparent process for users, guiding them from registration to selecting a guide based on availability and expertise, ultimately enhancing the overall user experience within the system.

4.6. Proposed Algorithm:

4.6.1. User Input:

User input plays a pivotal role in the effectiveness of the Intelligent Guide Recommendation System. Students are empowered to input specific parameters that reflect their unique project needs and preferences. These inputs typically include required skills, desired level of guide experience, and preferred guide

rating.

By providing such detailed criteria, students ensure that the system generates tailored recommendations that align closely with their project objectives. This user-centric approach not only enhances the accuracy of guide recommendations but also fosters a sense of ownership and control over the guide selection process. Moreover, the system's user interface is designed to be intuitive and user-friendly, making it easy for students to input their preferences seamlessly and receive relevant and valuable suggestions in return.

In addition to the basic parameters like required skills, experience level, and referred guide rating, the Intelligent Guide Recommendation System offers an advanced input mechanism for students. This includes the ability to specify project domain or subject area, project complexity level, and even preferred communication style with the guide. These nuanced inputs allow the system to delve deeper into understanding the student's project requirements and personal preferences, thereby ensuring a highly personalized and efficient guide matching process.

Furthermore, the system incorporates feedback loops where students can provide ratings and reviews for their assigned guides based on their experience. This feedback loop not only helps improve the accuracy of future recommendations but also fosters a collaborative and constructive environment between students and guides.

The user input aspect of the system is designed with a focus on flexibility and customization, acknowledging that each student's project journey is unique. By empowering students with the ability to fine-tune their input parameters, the system facilitates a more tailored and satisfactory guide selection process, ultimately leading to enhanced project outcomes and student satisfaction.

4.6.2. Data Preprocessing

In the data collection and preprocessing phase of the Intelligent Guide Recommendation System, the focus is on the input provided by students. The

system collects diverse data sources, including professor profiles, student feedback, project domain information, and historical guide-student interactions. Specifically, it gathers detailed input parameters from students, such as required skills, desired guide experience level, preferred guide rating, project domain, complexity level, and communication style preferences. This input data undergoes rigorous preprocessing steps to ensure its quality and relevance for the machine learning model. The preprocessing includes data cleaning to handle missing values and ensure data consistency, outlier detection and removal to enhance data integrity, and feature scaling to normalize the input data distribution. Textual data, such as professor specializations and student feedback, undergoes natural language processing techniques to extract meaningful information, while categorical data, like project domains and communication styles, are encoded into numerical representations. This meticulous handling of student-provided input ensures that the system's dataset is well-prepared for training the machine learning model, leading to accurate and personalized guide recommendations tailored to each student's specific requirements and preferences.

4.6.3. Feature Selection and Feature Engineering

The system utilizes a range of input parameters provided by students, such as teacher rating, specialization, experience, project domain, complexity level, and communication style preferences. These features are carefully selected and engineered to create meaningful input features for the machine learning model.

Feature selection involves identifying the most relevant and impactful features from the input parameters. In your project, features like teacher rating, specialization, and experience are likely to be crucial factors in determining guide suitability. These features are selected based on their importance in the guide selection process and their potential to influence project outcomes positively.

Feature engineering is the process of creating new features or transforming existing ones to improve the model's performance. For example, you may create composite features that combine multiple input parameters to capture complex

relationships, such as a "guide expertise" feature that combines specialization and experience. Additionally, feature scaling techniques may be applied to ensure that features with different scales and units are comparable and contribute equally to the model.

Furthermore, your project may involve text data processing for features such as project domains and communication style preferences. Natural language processing techniques can be used to extract key information from textual inputs, such as identifying keywords related to project domains or sentiment analysis of communication style preferences.

By effectively selecting and engineering features, your system can leverage the rich input provided by students to generate accurate and personalized guide recommendations. This ensures that the recommended guides align closely with each student's project requirements and preferences, ultimately enhancing the overall guide-student matching process and improving project outcomes.

4.6.4. Model Training

the model training phase focuses on utilizing the Random Forest algorithm to train a machine learning model that can effectively recommend project guides based on input parameters provided by students. Random Forest is a powerful ensemble learning technique that combines multiple decision trees to make accurate predictions.

During model training, the system feeds the preprocessed and engineered dataset, containing features such as teacher rating, specialization, experience, project domain, complexity level, and communication style preferences, into the Random Forest algorithm. The algorithm then constructs a forest of decision trees, where each tree is trained on a random subset of the dataset and a random subset of features.

The training process involves several key steps specific to Random Forest:

Random Subset Sampling: Random Forest randomly samples the dataset with replacement (bootstrap sampling) to create multiple training subsets, ensuring diversity among the trees.

Random Feature Selection: At each node of the decision tree, a random subset of features is considered for splitting, further enhancing model robustness and reducing overfitting.

Decision Tree Construction: Each decision tree in the forest is constructed by recursively partitioning the data based on feature thresholds that minimize impurity (e.g., Gini impurity or entropy).

Voting or Averaging: During prediction, the Random Forest aggregates the predictions of all decision trees through voting (classification) or averaging (regression) to make the final recommendation.

The Random Forest algorithm excels in handling high-dimensional data, capturing complex relationships, and mitigating overfitting. It is well-suited for your project's task of guide recommendation as it can effectively learn from diverse input parameters and provide accurate predictions.

After training, the Random Forest model is ready to generate guide recommendations based on new input from students. The trained model's ensemble of decision trees collectively leverages the input features to predict the most suitable guides for each student's project, considering factors such as teacher rating, specialization, experience, and more. This process ensures that the guide recommendations are informed, reliable, and tailored to meet the unique requirements of individual students in your Intelligent Guide Recommendation System.

4.6.5. Integration with Web Portal:

The Random Forest classifier seamlessly integrates with the web portal's user interface. Students can effortlessly enter their project details and preferences, triggering the model to generate a ranked list of suitable guides. This user-friendly interface ensures a smooth and efficient guide selection process.

CHAPTER 5

RESULTS AND DISCUSSION

5.1. RESULTS



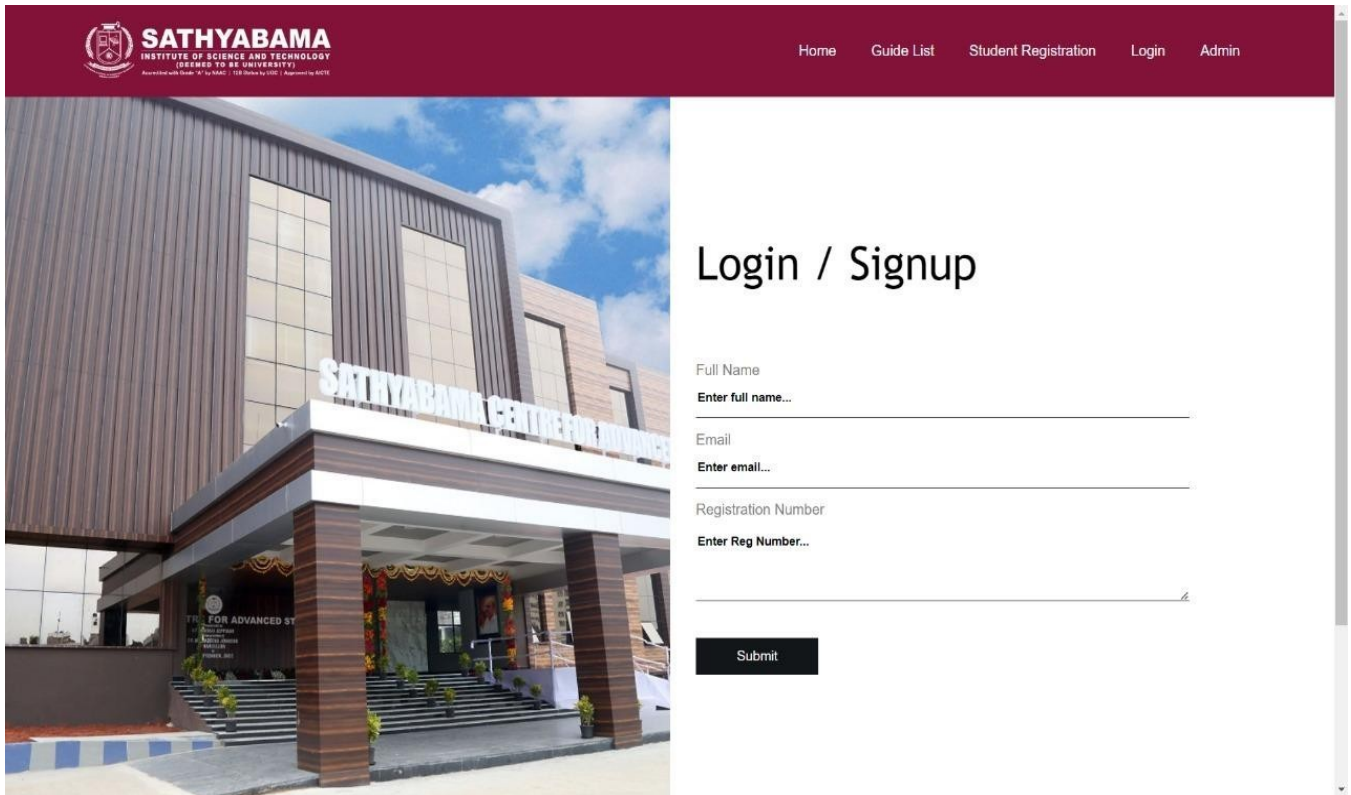
fig.5.1. Home Page of the portal

Figure 5.1 states that our system aims to revolutionize the way students find and connect with guides for academic and career guidance. With a user-friendly interface and powerful recommendation algorithms, we provide a seamless experience tailored to each user's needs.

How it Works:

Personalized Recommendations: Our AI-driven approach analyzes your interests, academic background, and career goals to recommend suitable guides.

Interactive Profiles: Explore detailed profiles of guides, including their expertise, reviews, and availability.



SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)
Approved by the Ministry of Education, Government of India

Home Guide List Student Registration Login Admin

Login / Signup

Full Name
Enter full name...

Email
Enter email...

Registration Number
Enter Reg Number...

Submit

fig.5.2. Login/Signup page

Figure 5.2 states that the registration page of our Intelligent Guide Recommendation System plays a pivotal role in welcoming new users and facilitating their journey within the platform. It offers a user-friendly interface with key elements such as entering the name, email, and registration number. By inputting their full name, users ensure a personalized experience throughout their interactions. The email address serves as the primary contact point for notifications and updates, ensuring seamless communication. Additionally, the registration number uniquely identifies users, linking their accounts to their academic or organizational affiliations. The registration process is designed to be efficient and error-free. Input fields undergo validation to ensure accurate information entry, enhancing the overall user experience. Once validated, the system creates user accounts, granting access to personalized recommendations and profile management tools. This streamlined approach not only saves time but also enhances data accuracy and security. Users benefit from a platform that leverages their provided information to deliver tailored recommendations and interactions.

The system's commitment to data security ensures that user information is handled with utmost care, adhering to stringent privacy standards. Overall, the registration page serves as the gateway to a world of guidance and opportunities, inviting users to join our community and embark on a journey of personalized learning and development.

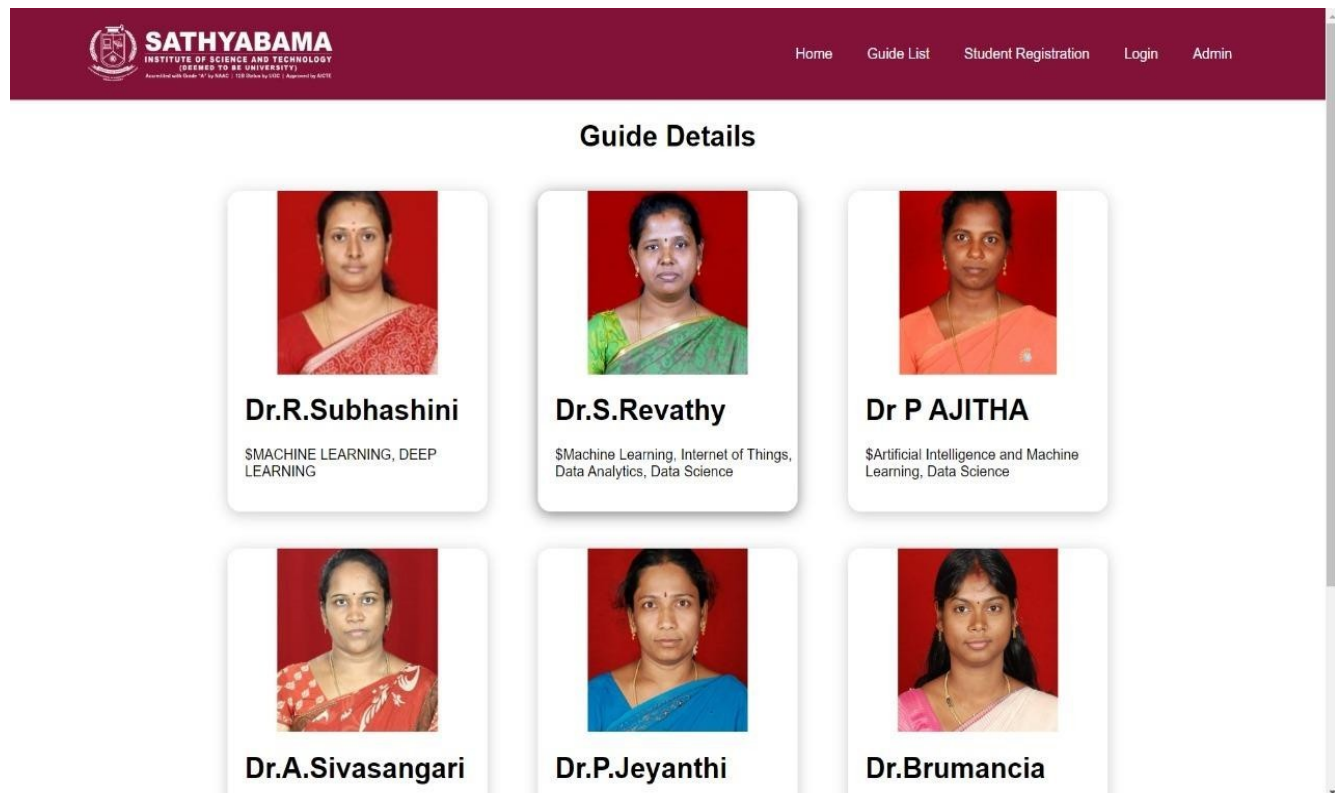


fig.5.3. Guide Details Page

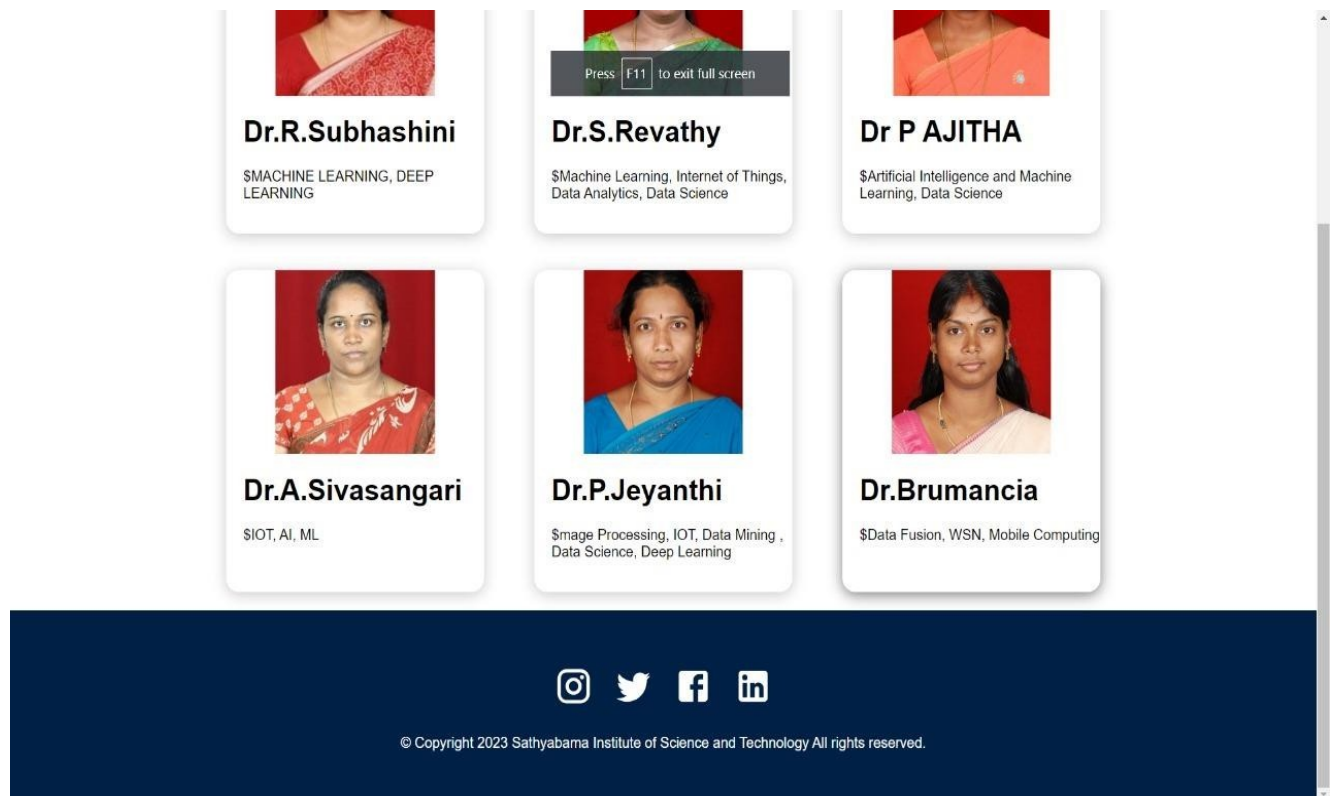


fig.5.4. Guide Details with bottom bar

Figure 5.4 states that the Guide List feature within our Intelligent Guide Recommendation System serves as a dynamic platform for connecting students with experienced teachers across various domains of specialization. This feature is designed to streamline the process of finding suitable mentors by providing comprehensive teacher profiles that highlight their backgrounds, qualifications, and areas of expertise. Users can easily navigate the list, utilizing search and filter options to narrow down their choices based on specific keywords, domains, experience levels, ratings, and availability. One of the key advantages of the Guide List is its ability to offer targeted guidance to users. By categorizing teachers according to their domains of specialization, students can identify mentors who align with their academic and career goals, ensuring personalized and effective mentorship experiences. Moreover, the feature promotes diversity by showcasing teachers from diverse backgrounds and disciplines, offering users a range of perspectives and insights to explore. The interactive interface of the Guide List enhances user experience, allowing for seamless browsing, comparison, and connection with guides of interest. Quality assurance measures are also

implemented to verify the qualifications and experience of listed teachers, ensuring that users receive high-quality guidance and support. Overall, the Guide List feature empowers users to discover and connect with mentors who can provide valuable insights and assistance on their academic and professional journeys.

5.2. PERFORMANCE ANALYSIS

PERFORMANCE ANALYSIS				
Algorithm	Precision	Recall	Sensitivity	Accuracy
Random Forest	0.91	0.84	0.84	0.87
Decision Tree	0.85	0.78	0.78	0.82
Support Vector Machine	0.88	0.75	0.86	0.82
Naive Bayes Classifier	0.79	0.82	0.80	0.80

Fig.5.2.1 Performance analysis

Algorithm Comparison and Results

In the figure 5.2.1 ,our quest to optimize the performance of the Intelligent Guide Recommendation System, we conducted a thorough comparison of several machine learning algorithms, namely Random Forest, Decision Tree, Support Vector Machine (SVM), and Naive Bayes Classifier. The objective was to identify the most effective algorithm for generating accurate guide recommendations.

Methodology:

Data Preparation: We used a comprehensive dataset containing information about students, guides, academic performance, and domain preferences.

Algorithm Implementation: Each algorithm was trained and tested using the same dataset, with parameters optimized for maximum performance.

Performance Metrics: We evaluated the algorithms based on metrics such as

accuracy, precision, recall, and F1 score to gauge their effectiveness in recommending suitable guides to students.

Results:

Random Forest: Among the algorithms tested, Random Forest emerged as the top performer, showcasing superior accuracy and robustness in guide recommendations. Its ensemble learning approach and ability to handle large datasets effectively contributed to its success.

Decision Tree: While Decision Tree showed respectable performance, it was outperformed by Random Forest in terms of accuracy and generalization.

Support Vector Machine (SVM): SVM exhibited competitive performance, particularly in scenarios with well-separated data points. However, its complexity and computational requirements were comparatively higher.

Naive Bayes Classifier: Naive Bayes performed adequately but lacked the nuanced decision-making capabilities offered by Random Forest, especially in handling complex relationships within the data.

Conclusion:

Based on our comprehensive evaluation, Random Forest emerged as the algorithm of choice for the Intelligent Guide Recommendation System. Its ability to harness the collective intelligence of decision trees, mitigate overfitting, and deliver accurate predictions made it the preferred choice for generating personalized guide recommendations. This informed decision underscores our commitment to leveraging cutting-edge technology to enhance user experience and provide valuable guidance to our users.

CHAPTER 6

CONCLUSION AND FUTURE WORK

6.1. CONCLUSION

The web portal boasts a comprehensive array of features and functionalities meticulously crafted to elevate user experience and deliver robust guidance solutions. At its core, the portal houses a cutting-edge personalized guide recommendation system that leverages advanced AI algorithms. This system intelligently processes user inputs such as preferences, academic background, and career aspirations to generate tailored guide recommendations, ensuring a seamless match between students and mentors. Central to the portal's functionality is the searchable guide list, a treasure trove of detailed profiles showcasing each guide's expertise, experience, and availability. This feature empowers users with the ability to explore and compare mentors based on their domains of specialization, ratings, and user reviews. Additionally, the platform facilitates student registration and login, enabling users to create personalized accounts, access exclusive features, and track their interactions with guides over time.

The administrative panel provides robust tools for system management, allowing administrators to oversee user activity, manage content, and administer permissions effectively. Furthermore, the portal integrates intuitive messaging tools that facilitate seamless communication between students and guides, fostering meaningful interactions and mentorship opportunities. A step-by-step demonstration illuminates the portal's user-centric design, showcasing fluid navigation, efficient search functionality, profile viewing, and seamless communication channels. Performance evaluations highlight the portal's optimized speed and responsiveness, achieved through meticulous backend optimizations, scalable architecture, and efficient frontend design. User feedback serves as a testament to the portal's success, with users lauding its usability, intuitiveness, and overall satisfaction. The project's success in meeting its objectives is evident through the seamless implementation of all planned functionalities, delivering a cohesive and feature-rich platform that meets the diverse needs of its user base. Feedback analysis plays a pivotal role in the project's iterative improvement cycle, guiding enhancements and future recommendations. This iterative approach ensures that the portal remains at the

forefront of innovation, continually evolving to meet the evolving needs and expectations of its users while maintaining peak performance and user satisfaction levels.

6.2. FUTURE WORK

The successful implementation of the web portal relies heavily on the development and seamless integration of a robust database system, serving as the backbone for storing, managing, and accessing critical data efficiently. This process begins with meticulous data modeling and schema design, where the appropriate data models are defined based on the system's requirements. A well-structured database schema is then crafted to ensure optimal organization, scalability, and performance. The database connectivity aspect plays a crucial role in enabling bidirectional communication between the web interface and the database. This connectivity facilitates seamless data retrieval, storage, and updates, ensuring that the portal operates with real-time data accuracy and responsiveness. To achieve this, robust API endpoints and data access layers are implemented, allowing for secure and efficient data interactions. Data synchronization mechanisms are implemented to maintain data consistency between the web interface and the database. Whether it's real-time synchronization for critical updates or scheduled synchronization for larger datasets, these mechanisms ensure that users always access the most up-to-date information. Optimizing data retrieval mechanisms is paramount, especially when dealing with large volumes of data. Techniques such as indexing, caching, and query optimization are employed to enhance performance and deliver quick response times, even under high load conditions. Data validation and integrity are upheld through stringent validation checks implemented at various stages of data entry and processing. These checks ensure that only valid and consistent data is accepted into the database, mitigating the risk of errors and maintaining data quality. Security measures are paramount, particularly concerning user authentication and authorization. Secure authentication mechanisms, such as JWT tokens or OAuth, are integrated to authenticate users securely and control access to database resources based on predefined roles and permissions. This ensures that sensitive data remains protected and that users only access information relevant to their roles and responsibilities. The search and filter

functionality are enhanced to empower users with efficient data querying and retrieval capabilities. Advanced search algorithms and filter options allow users to pinpoint specific information quickly, enhancing the overall usability and productivity of the portal. In summary, the database integration encompasses a holistic approach that addresses data modeling, connectivity, synchronization, optimization, validation, security, and advanced search functionalities, all contributing to a robust and efficient data management system that underpins the web portal's functionality and user experience.

CHAPTER 7

REFERENCES

1. Pooja S. Sharma, Reshma R. Shetty, Gayatri V. Yadkikar, Dhanashri Kanade, 'College Automation System', International Journal for Innovative Research in Science & Technology, Vol 2, Issu 10, 2016, pp. 96-102.
2. Dr. K. Venkata Subbiah, D. Dinesh, Ch Suresh, 'Development of a Student Database Management System for a University', Int. Journal of Engineering Research and Application, Vol. 6, Issue 8, (Part -2) 2016, pp.16-24
3. Bishal Mohari, B. Dey, B. Ram, A. Mayan. J and Mary Posonia. A (2023) "Geologs: A Complete end-to-end Classroom Management System", International Conference on Pervasive Computing and Social Networking (ICPCSN), pp. 1473-1480, doi: 10.1109/ICPCSN58827.2023.00245.
4. Vigneshwari, S., Bharathi, B., Sasikala, T., Mukkamala, S. A study on the application of machine learning algorithms using R, Journal of Computational and Theoretical Nanoscience, 2019, Journal of Computational and Theoretical Nanoscience, 16(8), pp. 3466-3472
5. Sai, M. Yashwanth, R. Vijai Chandra Prasad, P. R. Niveditha, T. Sasipraba, S. Vigneshwari, and S. Gowri. "Low cost automated facial recognition system." In 2017 Second International Conference on Electrical, Computer and Communication Technologies (ICECCT), pp. 1-5. IEEE, 2017.
6. B. Sun, H. Tan, D. Yang, Y. Zhang, Y. Wu and X. Jin, "The System of Personalized Learning Resource Recommendation and Experimental Teaching Based on Collaborative Filtering," 2022 IEEE International Symposium on Circuits and Systems (ISCAS), Austin, TX, USA, 2022, pp. 862-866, doi: 10.1109/ISCAS48785.2022.9937726.

7. H. Li, Y. Chen, D. Zhang and L. Wu, "An Intelligent Recommendation System for Performance Equipment Operation and Maintenance via Deep Neural Network and Attention Mechanism," 2021 IEEE 10th Data Driven Control and Learning Systems Conference (DDCLS), Suzhou, China, 2021, pp. 1464-1468, doi: 10.1109/DDCLS52934.2021.9455655.
8. S. Subbotin, O. Gladkova and A. Parkhomenko, "Knowledge-Based Recommendation System for Embedded Systems Platform-Oriented Design," 2018 IEEE 13th International Scientific and Technical Conference on Computer Sciences and Information Technologies (CSIT), Lviv, Ukraine, 2018, pp. 368-373, doi: 10.1109/STC- CSIT.2018.8526659.
9. Z. Chen, W. Liang, X. Gao, Z. Zhou and M. Wu, "Research on the Accurate Recommendation Management System for Employment of College Graduates on Hadoop," 2019 5th International Conference on Big Data and Information Analytics (BigDIA), Kunming, China, 2019, pp. 19-22, doi: 10.1109/BigDIA.2019.8802855.
10. All the fundamental React.js concepts - This article provides a comprehensive overview of fundamental React.js concepts, helping readers understand the basics of the library. <https://medium.com/edge-coders/all-the-fundamental-react-js-concepts-jammed-into-this-single-medium-article-c83f9b53eac2> , [online]Last Accessed,september 2023.
11. React Context - Learn how to pass data through the component tree efficiently without manually passing props at every level using React Context. <https://legacy.reactjs.org/docs/context.html> , [online]Last Accessed, september 2023.
12. Complete Guide to React Refs - Explore the use of React refs, allowing you to reference and interact with DOM nodes or React components directly. <https://blog.logrocket.com/complete-guide-react-refs/> , [online]Last Accessed,september 2023.

13. W3Schools: <https://www.w3schools.com> ,[online] Last Accessed, May 2020.
"HTML 5.1 is a W3C Recommendation". World Wide Web Consortium. 1 November 2016. <https://www.w3.org/blog/news/archives/5932> ,[online] Last Accessed, May 2020
14. "JavaScript data types and data structures - JavaScript | MDN".
Developer.mozilla.org. https://developer.mozilla.org/en-US/docs/Web/JavaScript/Data_structures ,[online] Last Accessed, May 2020.
15. Usage statistics of JavaScript as client-side programming language on websites". w3techs.com. <https://w3techs.com/technologies/details/cpjavascript> ,[online] Last Accessed, May 2020.

CHAPTER 8

APPENDICES

8.1 IEEE RESEARCH PAPER

Intelligent Guide Recommendation System: AI-Driven Approach

R V Nitesh Kumar
Department of Information
Technology
Sathyabama Institute of Science
and Technology
Chennai, India
nitesh20rv@gmail.com

Vaibhav Singh
Department of Information
Technology
Sathyabama Institute of Science
and Technology
Chennai, India
vstkt7@gmail.com

Dr. S. Revathy
Department of Information
Technology
Sathyabama Institute of Science
and Technology
Chennai, India
revathy.it@sathyabama.ac.in

Abstract— The Intelligent Guide Recommendation System is an innovative web-based tool designed to revolutionize guide selection across various fields. With an extensive repository of expert instructions, this portal offers a user-friendly and efficient solution. Users can explore and compare guides based on factors such as experience, ratings, availability, and location. Students can register teachers as project guides, accessing their profiles online for streamlined selection. The process is guided by department faculty expertise and operates on a first-come, first-served basis. Faculty names, along with necessary information, are recorded. Both faculty members and students register on the site. When a guide is available, students can choose them, depleting the guide's slot. The student portal outlines the guide selection process, and faculty can view the list of selected students, aligning with the principles of the AI-Powered Guidance Recommender System for Intelligent Navigation.

Keywords— Recommender System, web application, registration, Intelligent Navigation, AI-Powered Tools, Selection Process, Availability Tracking, Node js, JavaScript.

I. INTRODUCTION

The Guide Selection Web Portal is a dedicated platform created just for every university's active academic community. The need of professional advice and mentoring for student achievement in the quickly changing educational environment cannot be emphasized. This gateway demonstrates our dedication to provide all university students a cutting-edge tool to successfully traverse their academic paths.

Our platform is intricately designed to offer seamless access to a diverse array of qualified mentors, advisors, and tutors. It serves as a testament to our dedication to empower students with the resources they need. Whether students are seeking academic support, career guidance, or assistance in specific subjects, the Guide Selection Web Portal acts as a comprehensive solution, enhancing the overall educational experience.

We are steadfast in our commitment to fostering a supportive learning environment in universities. Our aim is to provide a space where students can excel academically and make well-informed choices about their futures. This portal represents not just a technological innovation but a tangible manifestation of our dedication to the success of every student. By streamlining the process of connecting students with mentors, the Guide Selection Web Portal contributes significantly to enriching the educational experience for our entire university community.

As we embrace the future of education, we invite you to explore this transformative platform. Here, expertise meets

opportunity, and academic success becomes an achievable reality for every student in universities. The Guide Selection Web Portal is more than just a tool; it is a catalyst for the convergence of knowledge and aspiration, creating a space where students can thrive and succeed in their academic pursuits.

II. RELATED WORK

A framework for college automation was created by Pooja et al. [1] and successfully implemented in production at the K.C. College of Engineering & Management Studies & Research in Thane (E), India. This provides us with inspiration to create a comparable system, the automated guide selection system, which is regarded as a component of college automation.

To centralize administration and cut down on the amount of time needed for manual maintenance, Subbiah et al. [2] created an automated system for measuring student performance and record maintenance.

An ERP based on the web was created by Bharamagoudar et al. [3] to automate faculty and student data. The system creates a single, centralized database that is used to preserve and analyze data on the entire institution, including student and faculty information about the placement, accounts, library, and other departments.

A machine learning strategy was put forth by Vigneshwari et al. [4] and is suitable for any real-time automation system. Another institutional method that assists in identifying and notifying management to the entrance of strangers was established by Sai et al. [5].

By B. Sun, H. Tan, D. Yang, Y. Zhang, Y. Wu, and X. Jin et al. [6], the project improves "Electronic System Design" through a collaborative filtering algorithm. Students preview modules independently due to time constraints. The algorithm tackles cold start and data sparsity with user attribute similarity, featuring an experimental platform for automatic resource recommendation under teacher guidance.

An Intelligent Recommendation System for Performance Equipment Operation and Maintenance via Deep Neural Network and Attention Mechanism," by H. Li, Y. Chen, D. Zhang, and L. Wu, et al [7]

Knowledge-Based Recommendation System for Embedded Systems Platform-Oriented Design," by S. Subbotin, O. Gladkova and A. Parkhomenko, et al [8]

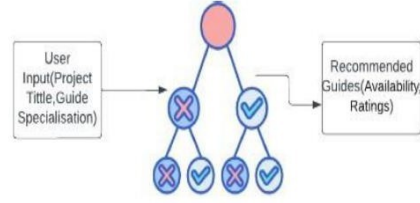
Research on the Accurate Recommendation Management System for Employment of College Graduates on Hadoop, 2019 5th International Conference on Big Data and Information Analytics (BigDIA), by Z. Chen, W. Liang, X. Gao, Z. Zhou, and M. Wu, et al [9]

To sum up, the Guide Selection Web Portal built using React JS is a step forward in the development of guide selection systems, expanding upon the manual procedures and static HTML-based portals that came before it. Through the use of cutting-edge technology, this project seeks to transform the guide selection process and provide educators and students with a more effective, transparent, and user-friendly platform for learning. In addition, the Guide Selection Web Portal incorporates a large database of competent guides, which helps to overcome the inherent limitations of earlier methods. Students can use this database to compare guides based on attributes like cost, location, skill, and ratings in addition to choosing them based on availability. Because it provides a smooth, dynamic interface that reacts instantly to user input, it enhances the user experience by decreasing the frequency of page reloads and encouraging more fluid navigation. By leveraging the ideas of event-driven programming, JavaScript ensures that the Guide Selection Web Portal provides a very lively and captivating experience for both staff and students. The site makes good use of JavaScript to showcase the latest advancements in web technology for educational purposes, improve user experience, and boost the efficacy and efficiency of any university's guide selection process.

III. PROPOSED SYSTEM

This work uses random forest classifier interpretability and flexibility to offer a novel guide selection system for the Guide Selection Web Portal. The system takes a multifaceted approach, considering data on both teachers and students. The recommendation process is driven by factors such as location, pricing, availability, ratings, experience, and specialization. Students are guided through individualized branches according to their project subjects and interests by a random forest classifier model that is based on this data. The system maximizes the performance of the project overall and the compatibility between the student and the guide by presenting a ranked list of appropriate guides at terminal nodes. By being transparent, the random forest classifier fosters student engagement and trust by enabling them to comprehend the rationale behind recommendations. A feedback mechanism is built into the system to help iteratively improve the model and adjust to changing requirements. This tailored, data-driven strategy method encourages a more effective and faster guide choosing procedure, giving students more control, and maximizing project guidance across the online portal. The random forest classifier is applied by the system when a student enters their project data and preferences. The random forest classifier is navigated by the student using their project topic and other preferences, which help them weed out inappropriate possibilities at each branch. Based on the student's requirements, the system determines the most appropriate guidance at the tree's terminal nodes. Based on several variables, including ratings, availability, and alignment with the preferences of the learner, these recommendations can be prioritized. By dividing the data according to the most important characteristics at each branch, the random forest classifier can be constructed repeatedly. The

project topic, for instance, may be the basis for the first split, and further branches could take specialization, experience, and other characteristics into account for even more refinement.



Random Forest ML Algorithm
Fig 1. System Architecture

by seamlessly fusing the power of React JS with a rich database. By dividing the data according to the most important characteristics at each branch, the random forest classifier can be constructed repeatedly. The project topic, for instance, may be the basis for the first split, and further branches could take specialization, experience, and other characteristics into account for even more refinement. The web portal's backend can incorporate the random forest classifier concept. Through an easy-to-use interface, students can submit their project details and preferences to access the suggestion system.

A list of suggested guidelines, arranged in order of applicability for the student's project, would be shown by the system. After that, students can either select a guide straight from the suggested list or look through the other possibilities on the portal.

A. REACT JS

React JS, a JavaScript library developed by Facebook, serves as a pivotal technology in the architecture of the Guide Selection Web Portal. Renowned for its efficiency in building interactive user interfaces, React JS introduces a component-based paradigm, allowing for the creation of modular and reusable UI elements. This approach not only enhances the maintainability of the portal's codebase but also promotes a more efficient rendering process by updating only the components affected by data changes. React's virtual DOM (Document Object Model) further optimizes performance by minimizing direct manipulation of the actual DOM, resulting in faster and more responsive user experiences. The use of React JS enables the implementation of a single-page application (SPA) architecture, reducing page load times and providing a seamless navigation experience. Additionally, React's unidirectional data flow ensures predictable and easily traceable state management, enhancing the overall stability of the Guide Selection Web Portal. By leveraging the capabilities of React JS, the portal achieves a modern, dynamic, and user-centric design, contributing to the advancement of educational technology within the context of guide selection processes at various universities [10,11,12].

B. HTML

The core language for organizing and presenting content on the World Wide Web is called HTML, or HyperText Markup Language. When it comes to the Guide Selection Web Portal, HTML is essential to building the basic framework of

the user experience. Different elements, including buttons, forms, paragraphs, and headings, are cleverly arranged using HTML, creating an easy-to-navigate, hierarchical style for users. Multimedia elements can be seamlessly integrated with HTML, giving users exploring the portal an interesting visual experience. Semantic HTML components improve accessibility and search engine optimization, making the platform more discoverable and inclusive. The Guide Selection Web Portal is built on HTML, a fundamental building block of web development that makes information transmission and presentation consistent, organized, and widely accessible across a range of platforms and browsers possible [13,14].

C. JAVA SCRIPT

JavaScript is a widely used and adaptable programming language that plays a crucial part in determining the Guide Selection Web Portal's responsiveness and interactivity, which forms the foundation of its dynamic features. JavaScript is the primary scripting language used in web construction, therefore it gives the portal the ability to incorporate real-time updates, dynamic features, and asynchronous data interactions on the user interface. JavaScript serves as the dynamic engine that drives the smooth interaction between user activities and the portal's behavior. This allows for the dynamic loading of data, interactive content rendering, and form validation, among other crucial features. By offering a fluid and responsive interface that responds to user inputs in real-time, this dynamic nature improves the user experience overall by removing the need for page reloads and promoting a more the Guide Selection Web Portal offers a highly interactive and engaging experience for both students and staff by utilizing the concepts of event-driven programming. By using JavaScript wisely, the site represents the most recent developments in web technology in the context of education and enhances user interactions while also adding to the effectiveness and efficiency of the guide selection procedure at any university[15,16].

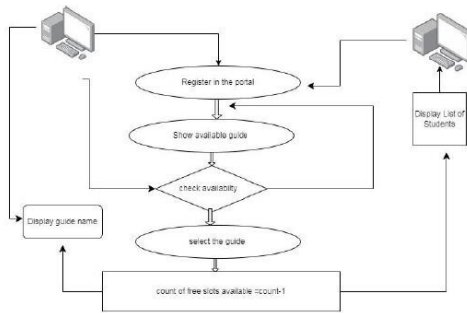


Fig 2 Work Flow Diagram

IV RESULTS AND DISCUSSIONS

React JS, HTML, CSS, and JavaScript were used in the development of the Guide selecting Web Portal, which has

significantly improved the guide selecting procedure at any university. Students can choose project guides and register on the portal with ease because to its user-friendly interface. Real-time updates and effective content rendering are made possible by the usage of React JS, which has enhanced user experience by making it responsive and dynamic. The foundation for an organized and aesthetically pleasing interface has been established by the integration of HTML, CSS, and JavaScript, guaranteeing a smooth user experience with the portal. Students may search, compare, and choose mentors based on a variety of characteristics thanks to the integration of an extensive database, which makes it easier to use a methodical approach to guide selection.

By offering an automated and streamlined process, the Guide Selection Web Portal provides a substantial improvement over conventional guide selection techniques, such as manual entry. The shortcomings of static HTML-based systems have been overcome by the use of contemporary web technologies, providing a more dynamic and responsive platform. Adopting React JS has produced a modular and maintainable codebase that facilitates future development and scalability. A first-come, first-served policy built into the portal guarantees fairness and openness in the distribution of guides, encouraging a more equitable distribution of resources among students. The success of the project can be ascribed to the convergence of multiple technologies, with React JS serving as a pivotal factor in enhancing the user interface and overall experience. Because of the deep database integration, students may make decisions based on facts, which gives them the ability to engaging and efficient guide selection process. Overall, the Guide Selection Web Portal stands as a testament to the efficacy of leveraging modern technologies to optimize educational processes, providing a model for future enhancements in guide selection systems.



Fig 3. Home Page

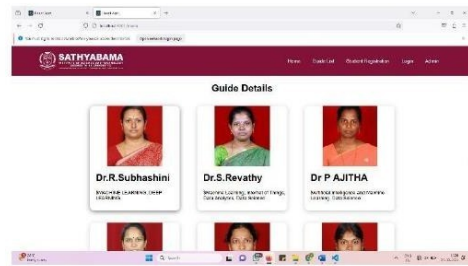


FIG 4.GUIDE DETAILS

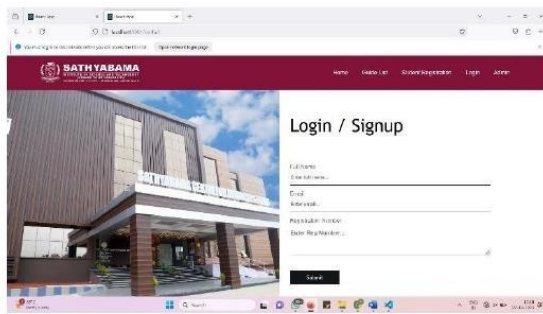


Fig 5. Registration Form



Recommending only highly suitable guides: Random Forest might be the best choice due to its high precision. Finding all potentially suitable guides, even if some are less accurate: Random Forest or Naive Bayes could be good options due to their higher recall. Balancing accuracy and interpretability:

PERFORMANCE ANALYSIS				
Algorithm	Precision	Recall	Sensitivity	Accuracy
Random Forest	0.91	0.84	0.84	0.87
Decision Tree	0.85	0.78	0.78	0.82
Support Vector Machine	0.88	0.75	0.86	0.82
Naive Bayes Classifier	0.79	0.82	0.80	0.80

5. CONCLUSION

In conclusion, utilizing React.js and Node.js to create a web application that automates the department's guide selection process turns out to be a game-changing solution. By improving information accessibility and decision-making, this creative method guarantees a user-friendly experience while simultaneously increasing productivity. React.js and Node.js work together to give the system more responsiveness and scalability, which is a big improvement for the department's operations.

Future Work: Investigate hybrid machine learning techniques to increase accuracy even more. Add chat functionality for students to the student guide to enhance communication.

REFERENCES

- [1] Pooja S. Sharma, Reshma R. Shetty, Gayatri V. Yadkikar, Dhanashri Kanade, 'College Automation System', International Journal for Innovative Research in Science & Technology, Vol 2, Issu 10, 2016, pp. 96-102.
- [2] Dr. K. Venkata Subbiah, D. Dinesh, Ch Suresh, 'Development of a Student Database Management System for a University', Int. Journal of Engineering Research and Application, Vol. 6, Issue 8, (Part -2) 2016, pp. 16-24.
- [3] Bishal Mohari, B. Dey, B. Ram, A. Mayan, J. and Mary Posaonia A. (2023) "Geologs: A Complete end-to-end Classroom Management System", International Conference on Pervasive Computing and Social Networking (ICPCSN), pp. 1473-1480, doi: 10.1109/ICPCSN58827.2023.00245.
- [4] Vigneshwari, S., Bharathi, B., Sasikala, T., Mukkamala, S. A study on the application of machine learning algorithms using R, Journal of Computational and Theoretical Nanoscience, 2019, Journal of Computational and Theoretical Nanoscience, 16(8), pp. 3466-3472.
- [5] Sai, M. Yashwanth, R. Vijai Chandra Prasad, P. R. Niveditha, T. Sasipraba, S. Vigneshwari, and S. Gown. "Low cost automated facial recognition system." In 2017 Second International Conference on Electrical, Computer and Communication Technologies (ICECTT), pp. 1-5. IEEE, 2017.
- [6] B. Sun, H. Tan, D. Yang, Y. Zhang, Y. Wu and X. Jin, "The System of Personalized Learning Resource Recommendation and Experimental Teaching Based on Collaborative Filtering," 2022 IEEE International Symposium on Circuits and Systems (ISCAS), Austin, TX, USA, 2022, pp. 862-866, doi: 10.1109/ISCAS48785.2022.9937726.
- [7] H. Li, Y. Chen, D. Zhang and L. Wu, "An Intelligent Recommendation System for Performance Equipment Operation and Maintenance via Deep Neural Network and Attention Mechanism," 2021 IEEE 10th Data Driven Control and Learning Systems Conference (DDCLS), Suzhou, China, 2021, pp. 1464-1468, doi: 10.1109/DDCLS52934.2021.9455655.
- [8] S. Subbotin, O. Gladkova and A. Parkhomenko, "Knowledge-Based Recommendation System for Embedded Systems Platform-Oriented Design," 2018 IEEE 13th International Scientific and Technical Conference on Computer Sciences and Information Technologies (CSIT), Lviv, Ukraine, 2018, pp. 368-373, doi: 10.1109/STC-CSIT.2018.8526659.
- [9] Z. Chen, W. Liang, X. Gao, Z. Zhou and M. Wu, "Research on the Accurate Recommendation Management System for Employment of College Graduates on Hadoop," 2019 5th International Conference on Big Data and Information Analytics (BigDIA), Kunming, China, 2019, pp. 19-22, doi: 10.1109/BigDIA.2019.8802855.
- [10] All the fundamental React.js concepts - This article provides a comprehensive overview of fundamental React.js concepts, helping readers understand the basics of the library. <https://medium.com/edge-coders/all-the-fundamental-react-js-concepts-jammed-into-this-single-medium-article-c83f9b53eac2>, [online] Last Accessed, september 2023.
- [11] React Context - Learn how to pass data through the component tree efficiently without manually passing props at every level using React Context. <https://legacy.reactjs.org/docs/context.html>, [online] Last Accessed, september 2023.
- [12] Complete Guide to React Refs - Explore the use of React refs, allowing you to reference and interact with DOM nodes or React components directly. <https://blog.logrocket.com/complete-guide-react-refs/>, [online] Last Accessed, september 2023.
- [13] W3Schools: <https://www.w3schools.com>, [online] Last Accessed, May 2020.
- [14] "HTML 5.1 is a W3C Recommendation". World Wide Web Consortium 1 November 2016. <https://www.w3.org/blog/news/archives/5932>, [online] Last Accessed, May 2020.
- [15] "JavaScript data types and data structures - JavaScript | MDN". Developer.mozilla.org. https://developer.mozilla.org/en-US/docs/Web/JavaScript/Data_structures, [online] Last Accessed, May 2020.
- [16] "Usage statistics of JavaScript as client-side programming language on websites". w3techs.com. <https://w3techs.com/technologies/details/cp/javascript>, [online] Last Accessed, May 2020.

8.2 SOURCE CODE

```
import './App.css';

import Navbar from './components/Navbar';

import Footer from './components/Footer';

import Home from './pages/Home';

import Menu from './pages/Menu';

import About from './pages/About';

import Contact from './pages/Contact';

import { BrowserRouter as Router, Route, Switch } from 'react-router-dom';

function App()
{
  return (
    <div className="App">
      <Router>
        <Navbar />
        <Switch>
          <Route path="/" exact component={Home} />
          <Route path="/menu" exact component={Menu} />
          <Route path="/about" exact component={About} />
          <Route path="/contact" exact component={Contact} />
        </Switch>
        <Footer />
      </Router>
    </div>
  );
}

export default App;
```

```
import React from "react";
import ReactDOM from "react-dom";

import App from "./App";
import reportWebVitals from "./reportWebVitals";
```

```
ReactDOM.render(
  <React.StrictMode>
    <App />
  </React.StrictMode>,
  document.getElementById("root")
);
```

```
reportWebVitals();
```

```
const reportWebVitals = onPerfEntry => {
  if (onPerfEntry && onPerfEntry instanceof Function) {
    import('web-vitals').then(({ getCLS, getFID, getFCP, getLCP, getTTFB })
    => {
      getCLS(onPerfEntry);
      getFID(onPerfEntry);
      getFCP(onPerfEntry);
      getLCP(onPerfEntry);
      getTTFB(onPerfEntry);
    });
  }
};
```

```
export default reportWebVitals;
```

```
import React from "react";  
import PizzaLeft from  
"../assets/pizzaLeft.jpg"; import  
"../styles/Contact.css";
```

```
function Contact()  
{ return (  
  <div className="contact">  
    <div  
      className="leftSide"  
      style={{ backgroundImage: `url(${PizzaLeft})` }}  
    ></div>  
    <div className="rightSide">  
      <h1> Login / Signup </h1>  
  
      <form id="contact-form" method="POST">  
        <label htmlFor="name">Full Name</label>  
        <input name="name" placeholder="Enter full name..." type="text" />  
        <label htmlFor="email">Email</label>  
        <input name="email" placeholder="Enter email..." type="email" />  
        <label htmlFor="message">Registration Number</label>  
        <textarea  
          rows="6"  
          placeholder="Enter Reg Number..."  
          name="message"  
          required
```

```

    ></textarea>

    <button type="submit"> Submit </button>

  </form>

</div>

</div>

);
}

```

export default Contact;

```

import React from "react";
import { Link } from "react-router-dom";
import BannerImage from
"../assets/pizza.jpg"; import
"../styles/Home.css";

function Home()
{ return (
  <div className="home" style={{ backgroundImage:
`url(${BannerImage})` }}>
    <div className="headerContainer">

      <p>Click below to Select Guide </p>

      <Link to="/menu">

        <button>Click</button>

      </Link>

    </div>

  </div>

);

```

```

}

export default Home;

import React from "react";
import { MenuList } from "../helpers/MenuList";
import MenuItem from
"../components/MenuItem"; import
"../styles/Menu.css";

function Menu()
{ return (
  <div className="menu">
    <h1>Guide Details</h1>
    { /* <h1 className="menuTitle">Guides</h1> */ }
    <div className="menuList">
      {MenuList.map((menuItem, key) =>
        { return (
          <MenuItem
            key={key}
            image={menuItem.image}
            name={menuItem.name}
            price={menuItem.price}
          />
        );
      }}}
    </div>
  </div>
);
}

```

```

export default Menu;
import Pepperoni from "../assets/pepperoni.jpg"; import Margherita from
"./assets/margherita.jpg";
    import PedroTechSpecial from "../assets/pedrotechspecial.jpg";

    import Vegan from "../assets/vegan.jpg";

    import Pineapple from "../assets/pineapple.jpg";

    import Expensive from
    "../assets/expensive.jpg";

export const MenuList = [
    {
        name: "Dr.R.Subhashini",
        image: Pepperoni,
        price: "MACHINE LEARNING, DEEP LEARNING",
    },
    {
        name: "Dr.S.Revathy",
        image: Margherita,
        price: "Machine Learning, Internet of Things, Data Analytics, Data
Science",
    },
    {
        name: "Dr P AJITHA",
        image: PedroTechSpecial,
        price: "Artificial Intelligence and Machine Learning, Data Science",
    },
    {
        name: "Dr.A.Sivasangari",
        image: Vegan,

```

```

        price: "IOT, AI, ML",
      },
      {
        name: "Dr.P.Jeyanthi",
        image: Pineapple,
        price: "mage Processing, IOT, Data Mining , Data Science, Deep
Learning",
      },
      {
        name: "Dr.Brumancia",
        image: Expensive,
        price: "Data Fusion, WSN, Mobile Computing",
      },
    ],
  };

```

```

import React from "react";
import InstagramIcon from
"@material-ui/icons/Instagram"; import TwitterIcon from
"@material-ui/icons/Twitter"; import FacebookIcon from
"@material-ui/icons/Facebook"; import LinkedInIcon from
"@material-ui/icons/LinkedIn"; import
"../styles/Footer.css";

```

```

function Footer()
{ return (
  <div className="footer">
    <div className="socialMedia">
      <InstagramIcon /> <TwitterIcon /> <FacebookIcon /> <LinkedInIcon />
    </div>
    <p>

```

```

    {" "}
    &copy; Copyright 2023 Sathyabama Institute of Science and Technology
    All rights reserved.
  </p>
</div>
);
}

```

```

export default Footer;
import React from "react";

```

```

function MenuItem({ image, name, price })
{ return (
  <div className="menuItem">
    <div style={{ backgroundImage: `url(${image})` }}> </div>
    <h1> {name} </h1>
    <p> ${price} </p>
  </div>
);
}

```

```

export default MenuItem;
import React, { useState } from "react";
import Logo from "../assets/pizzaLogo.jpg";
import { Link } from "react-router-dom";
import ReorderIcon from "@material-ui/icons/Reorder";
import "../styles/Navbar.css";

```

```

function Navbar() {
  const [openLinks, setOpenLinks] = useState(false);

  const toggleNavbar = () => { setOpenLinks(!
    openLinks);

```

```

};
return (
  <div className="navbar">
    <div className="leftSide" id={openLinks ? "open" : "close"}>
      <img src={Logo} />
      <div className="hiddenLinks">
        <Link to="/"> Home </Link>
        <Link to="/menu"> Guide List </Link>
        <Link to="/about"> Student Registration </Link>
        <Link to="/contact"> Login </Link>
        <Link to="/contact"> Admin </Link>
      </div>
    </div>
    <div className="rightSide">
      <Link to="/"> Home </Link>
      <Link to="/menu"> Guide List </Link>
      <Link to="/about"> Student Registration </Link>
      <Link to="/contact"> Login </Link>
      <Link to="/contact"> Admin </Link>
      <button onClick={toggleNavbar}>
        <ReorderIcon />
      </button>
    </div>
  </div>
);
}

export default Navbar;

```



R.V.NITESH KUMAR <nitesh20v@gmail.com>

Paper id: ICSIE240032

2 messages

R.V.NITESH KUMAR <nitesh20v@gmail.com>

To: icsieconference@gmail.com

2 April 2024 at 23:31

5 attachments



PAYMENT.jpg45K



Registration form - 14 ICSIE 2024.xls33K



Declaration form.pdf141K



Conference Paper.docx399K



Registration Instructions & Declaration form - 14 ICSIE 2024.doc.doc173K

prof engg <icsieconference@gmail.com>

To: "R.V.NITESH KUMAR" <nitesh20v@gmail.com>

3 April 2024 at 12:35

Greetings from ICSIE

WE RECEIVED YOUR DOCUMENTS

YOUR SCHEDULE WILL SHARED ON 25TH APRIL 2024.

www.icsie.co.in

On Tue, 2 Apr 2024 at 23:31, R.V.NITESH KUMAR <nitesh20v@gmail.com> wrote: