ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep039

FreelanceNest - Hire by Skill, Powered by AI

Anoop N G[1]; Preethi K P[2]

[1]Department of M C A UBDTCE Davangere, India
[2]Assistant Professor (Ad-HOC) Department of M C A UBDTCE Davangere, India

Publication Date: 2025/09/08

Abstract: An AI-powered platform called FreelanceNest is revolutionizing freelance recruiting by emphasizing openness and skill-based assessments. The platform guarantees fair and objective evaluations based on real-world problem-solving, as opposed to subjective assessments or resumes. The AI creates three customized problem statements depending on the necessary skills when project managers enter project specifics. In order to ensure openness and industry-standard coding techniques, freelancers choose a problem, fix it, and then submit their answer via GitHub. The AI backend assigns a score and provides thorough comments after assessing contributions according to criteria including requirements alignment, problem-solving methodology, and code quality. By automating the screening process, this method saves project managers time while providing independent contractors with an equitable opportunity to demonstrate their abilities. FreelanceNest expedites employment by emphasizing speed and merit, guaranteeing top-notch matching. By automating the screening process, this method saves project managers time while providing independent contractors with an equitable opportunity to demonstrate their abilities. FreelanceNest expedites the recruiting process by emphasizing efficiency and merit, guaranteeing top-notch matches between independent contractors and projects, which eventually improves results for both sides.

Keywords: *Freelancing Platform, Admin Dashboard, user Authentication, Project Management System, Role-Based Access Control.*

How to Cite: Anoop N G; Preethi K P (2025) FreelanceNest - Hire by Skill, Powered by AI. *International Journal of Innovative Science and Research Technology*, 10(9), 47-52. https://doi.org/10.38124/ijisrt/25sep039

I. INTRODUCTION

For millions of professionals worldwide, freelancing has become their preferred form of employment in the quickly changing digital economy. It provides freedom, flexibility, and access to possibilities around the world. On both ends of the scale, the freelancing economy still faces major obstacles in spite of its increasing popularity. While project managers usually have trouble finding and choosing applicants who are not just technically proficient but also dependable and dedicated to producing high-quality work, freelancers frequently struggle to locate jobs that truly fit their skill sets. Resumes and portfolios, which are frequently insufficient in assessing a candidate's current skill competency and realworld problem-solving abilities, are frequently the mainstay of the traditional hiring process. This dependence on superficial credentials usually results in mismatches, ineffective teamwork, and ultimately less than ideal project outcomes.

FreelanceNest offers a revolutionary solution to these enduring problems by modernizing and streamlining the freelance recruiting process through the use of artificial intelligence.

The platform's central component is an AI-powered assessment engine that substitutes objective, skill-based testing for subjective evaluation techniques. FreelanceNest makes sure that candidates are assessed based on the exact skills required for the position by dynamically creating code challenges that are customized to the particular needs of each project. Advanced AI metrics that evaluate code quality, problemsolving methodology, algorithmic efficiency, and adherence to project criteria are then used to investigate these difficulties. In addition to giving project managers trustworthy, datasupported hiring decisions, this also empowers independent contractors by providing them with an equitable opportunity to showcase their skills, regardless of their experience or background. Beyond simple hiring features, FreelanceNest creates a comprehensive, end-to-end platform for managing freelancers. Features like adaptive technical interviews, GitHub-based code submission and analysis, AI- generated issue statements, performance dashboards, skill leaderboards, multilingual support, and thorough feedback reports are all included. Together, these elements offer responsibility, scalability, and transparency in freelance partnerships. The system also has an automated matchmaking mechanism that suggests freelancers based on their talent profiles, performance history, and challenge results, which improves project alignment. The robustness and scalability of FreelanceNest are guaranteed by its technological underpinning. The backend uses Python with FastAPI for quick and scalable API development, while the frontend is built with React.js to provide a smooth and

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep039

responsive user interface. For adaptable and effective data administration, MongoDB is utilized, and Amazon Web Services (AWS) hosts the entire system to guarantee high availability, security, and performance. Through the integration of these technologies, the platform can manage several users at once, conduct realtime assessments, and provide a seamless user experience. FreelanceNest's ultimate goal is to promote efficiency, equity, and trust in the freelance hiring industry. The platform's emphasis on intelligent matching, automation, and merit-based evaluations improves project outcomes, shortens the time to recruit, and raises satisfaction levels for both project managers and independent contractors. Through astute, moral, and datadriven recruiting, FreelanceNest presents itself as a potent instrument to influence the future of freelance cooperation as digital work continues to expand.

- *Aim of the Paper*

The aim of the FreelanceNest project is to develop a web platform that connects freelancers and project managers for coding and content tasks. It streamlines project creation, assignment, and tracking to ensure smooth collaboration. The system includes features like project details, freelancer evaluations, and submission monitoring. Overall, it aims to enhance productivity, communication, and the quality of freelance project management.

- *Research Problem*

The research problem focuses on the absence of a streamlined, unified system for handling freelance projects, which often results in miscommunication, missed deadlines, and unclear task distribution. Many current platforms do not effectively combine project setup, freelancer assessment, and progress monitoring within a single framework. There is a clear demand for a solution that promotes seamless collaboration, visibility, and quality assurance between freelancers and project managers. FreelanceNest seeks to address this challenge by offering an integrated platform to simplify and optimize freelance project management.

II. RELATED WORKS

The toolkit looks at AI's expanding use in hiring, particularly with regard to asynchronous video interviews (AVIs). It draws attention to issues including prejudice, a dearth of feedback, and candidates' misunderstanding of AI procedures. To promote justice, diversity, and inclusion in hiring, recommendations include implementing transparent "glass box" procedures, enhancing candidate support, and striking a balance between AI and human input.[1] The article demonstrates how AI and machine learning can be used to forecast a candidate's potential performance prior to employment. Hiring decisions are improved and errors are decreased by looking at historical employee data. As a result, hiring is quicker and more precise.[2] This report examines how artificial intelligence (AI) is transforming hiring practices as they move from conventional approaches to Digital Recruitment 3.0. It addresses issues like bias, expense, and legal privacy while examining how AI streamlines processes like job posting, resume screening, evaluation, and coordination. Feedback from stakeholders emphasizes AI's potential to improve recruiting efficiency and equity while highlighting the necessity of openness and cooperation with human decision-making. There are suggestions for improving the use of AI in hiring.[3] By automating processes like candidate sourcing, screening, and selection, artificial intelligence (AI) enhances recruiting, according to the study. Eleven AI tools with characteristics like facial recognition and psychometric assessment are examined, including HireVue and X0PA AI. Although early recruitment stages are made more efficient by these techniques, subsequent stages, such as onboarding, require greater attention.[4] To enhance the recruiting and management of freelancers, the article "An Enhanced Freelancer Management System with Machine Learning-Based Hiring" offers a solution. It permits electronic contract signature, automates invoice generation and payment, and shortlists the best independent contractors using machine learning. In addition to addressing inefficiencies in current freelancer platforms, this approach guarantees a more efficient experience for both freelancers and entrepreneurs.[5] The paper "Artificial Intelligence in Human Resources Management: A Systematic Literature Review" analyses the ways in which AI is changing HR procedures in great detail. Highlighting both the advantages and difficulties, it looks at several AI uses in hiring, performance reviews, and staff retention. The study highlights that in order for HR professionals to successfully integrate AI technologies, ethical considerations and the acquisition of new skills are essential.[6] In the study "Towards an AI-Driven Talking Avatar in Virtual Reality for Investigative Interviews of Children," the creation of a virtual reality (VR) training system with an AI- driven talking avatar is examined. In order to assist law enforcement and youngster Protection Services (CPS) in conducting high-quality investigative interviews with abused children, the avatar imitates an abused youngster.[7] Examining how AI might both exacerbate and lessen bias in hiring, the essay "Algorithmic Inclusion: Shaping the Predictive Algorithms of Artificial Intelligence in Hiring" It focuses on issues with design, data, and decisionmaking, such as the dearth of diverse developers and unjust statistics. According to the report, if AI is applied properly, it can contribute to a more inclusive recruiting process by recommending improved checks, teamwork, and regulations.[8] The interactive AI chatbot presented in this paper is intended to perform real- time employment interviews, allowing candidates to ask questions and rephrasing or adding new ones in response to their partial responses. The chatbot's extensive interview capabilities are demonstrated by its usage of entity extraction and intent categorization for dynamic interaction, which has been verified through scenarios and trials.[9] The use of AI to evaluate applicants' personalities during video interviews is covered in this study. It assesses characteristics like agreeableness and openness by analyzing algorithms like Random Forest and XGBoost. By automating some steps of the hiring process and minimizing human bias, the aim is to make hiring quicker, less expensive, and more equitable.[10]

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep039

➢ *Existing System*

- Upwork: Upwork connects freelancers and clientsacross many industries with features like project posting, bidding, and escrow payments. However, it faces issues like high service fees, inconsistent project communication, and difficulties ensuring project-specific clarity — challenges that FreelanceNest addresses through streamlined project modules and clear assignment details.

- Fiverr: Fiverr allows freelancers to offer fixed-priceservices ("gigs"), making transactions fast and simple. Yet, it often encourages rushed work, lacks detailed project tracking, and is better suited for one-off tasks. FreelanceNest overcomes this by focusing on structured, long-term project management with detailed problem statements, progress tracking, and submission monitoring.

- Total: Total provides top-tier freelance talent witha strong vetting process, ensuring high quality. However, its exclusivity, higher costs, and limited accessibility make it less suitable for smaller clients or diverse project needs. FreelanceNest offers a more inclusive platform, balancing quality checks (like AI interview evaluations) with broader accessibility for both managers and freelancers.

III. METHODOLOGY

The paper follows a systematic approach to address the functional requirements related to freelancer registration, project posting, admin supervision, role-based access control, and real-time task tracking.

➢ *Admin*

Admins manage user accounts, handle disputes, and ensure compliance with platform policies. They oversee platform security, maintain system performance,and resolve technical issues. They monitor platform activity, generate reports, and optimize operations based on data insights.

➢ *Freelancers*

Freelancers create and manage their profiles, showcasing their skills and experience. They browse available projects, apply for suitable ones, and submit their work upon completion. They receive payments, track earnings, and get ratings and reviews from project managers.

➢ *Project Managers*

Project managers post new projects with detailed requirements, deadlines, and budgets. They review freelancer applications, assign tasks, and monitor project progress. They evaluate submissions, approve completed work, and release payments accordingly.

IV. DESIGN AND MODELING

The goal of the Freelance Nest project is to create a scalable and user-friendly platform that facilitates seamless interaction between freelancers and project managers through secure login, role-based access, and efficient project and task management. The design emphasizes modularity, responsiveness, and clarity in workflow to support smooth coordination and future scalability.

➢ *High Level Diagram*

To efficiently handle functions and data, the system separates the system into discrete levels, each with discrete tasks. Layered architecture is used to accomplish this. This diagram's layers are:

- *Presentation Layer:*

This layer serves as the user interface of the system, where users such as freelancers, project managers, and administrators interact with the platform. It is responsible for displaying data, capturing user input, and ensuring smooth user experience through responsive and intuitive design.

- *Business Layer:*

Also known as the application layer, this is where the core functionalities of the system are implemented. It handles processes such as user authentication, project assignment, task tracking, and notification management. This layer acts as a bridge between the user interface and the database, ensuring that the correct business rules are applied before any data is retrieved or stored.

- *Service Layer:*

The Business Layer and the Data Service Layer are connected by the Service Layer.This layer is responsible for managing the communication between the application and the database. It includes all the functions and methods that perform operations such as data retrieval, insertion, updating, and deletion. By separating data access logic, it ensures better maintainability, security, and consistency across the application.

- *Data Service Layer:*

The database layer is where all persistent data is stored and managed. It includes structured storage of user profiles, project details, task status, and login credentials. A relational database management system (RDBMS) is typically used to ensure data integrity, security, and support for complex queries, enabling efficient storage and retrieval of critical information.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep039

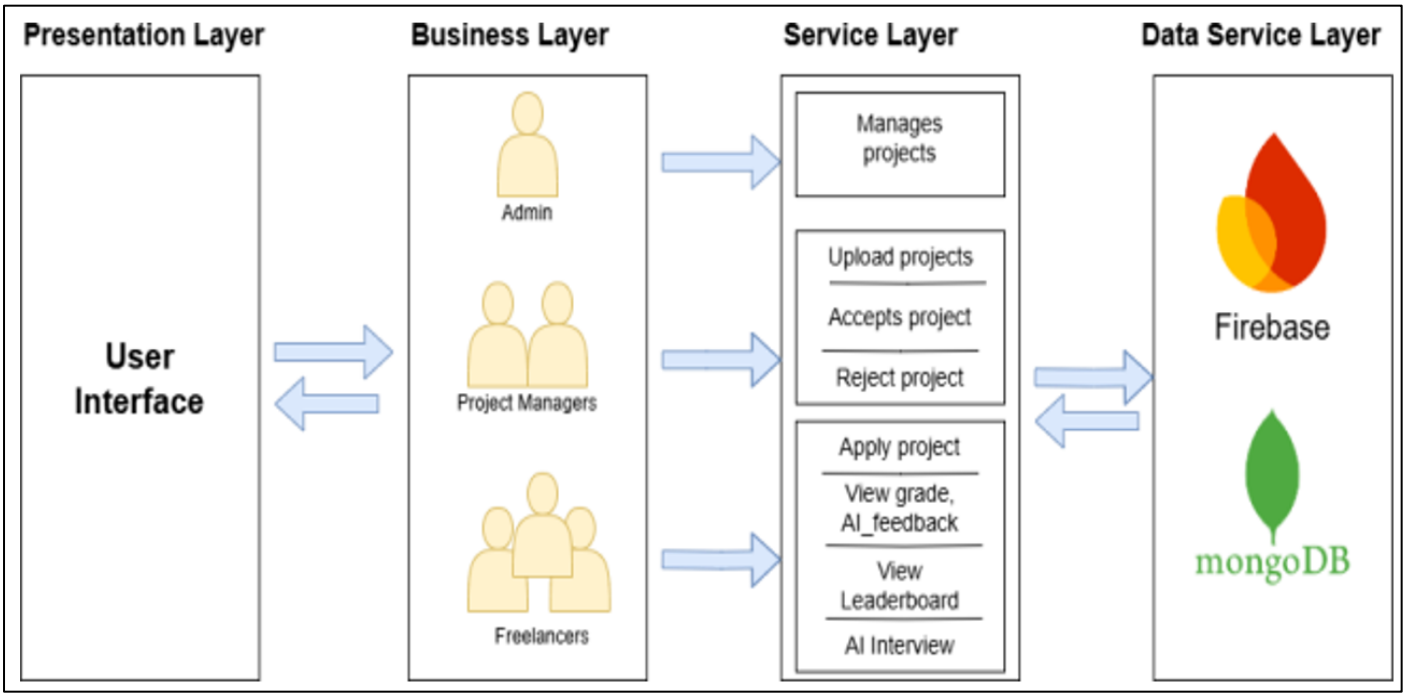

Fig 1 Architecture Diagram

V. IMPLEMENTATION

This image illustrates the landing page of the Freelance Nest platform, designed to provide a clear and engaging entry point for users. The interface presents a clean layout with distinct call-to-action buttons that allow users to identify themselves as either freelancers or project managers. The central heading highlights the platform's core objective—streamlining freelance project management—while the accompanying text emphasizes the use of AI-driven workflows and intuitive UI to enhance remote collaboration. This screen represents the first interaction users have with the system and reflects the platform's focus on accessibility, clarity, and user-centric design.

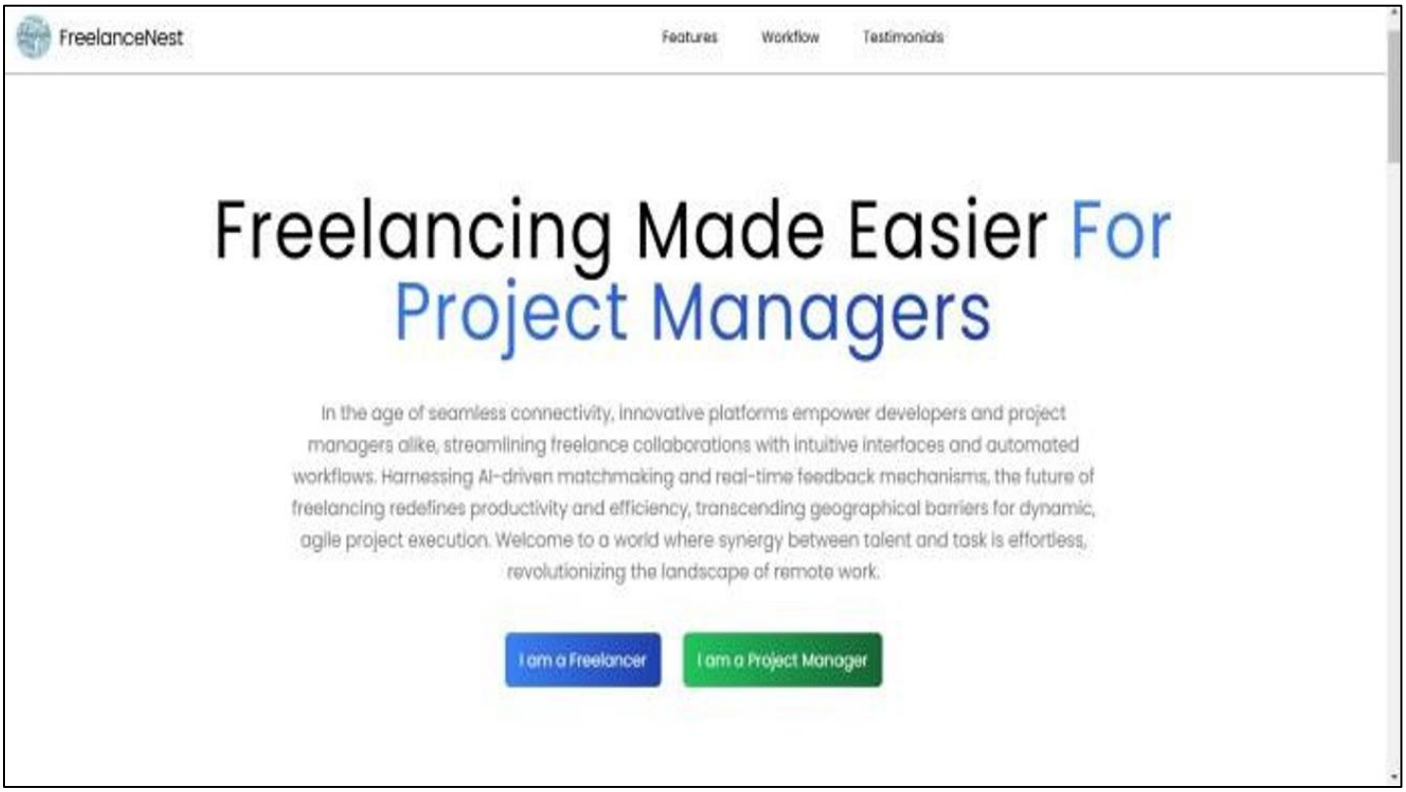

Fig 2 Login Page

This screen shows the dashboard view for project managers after logging into the Freelance Nest platform.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep039

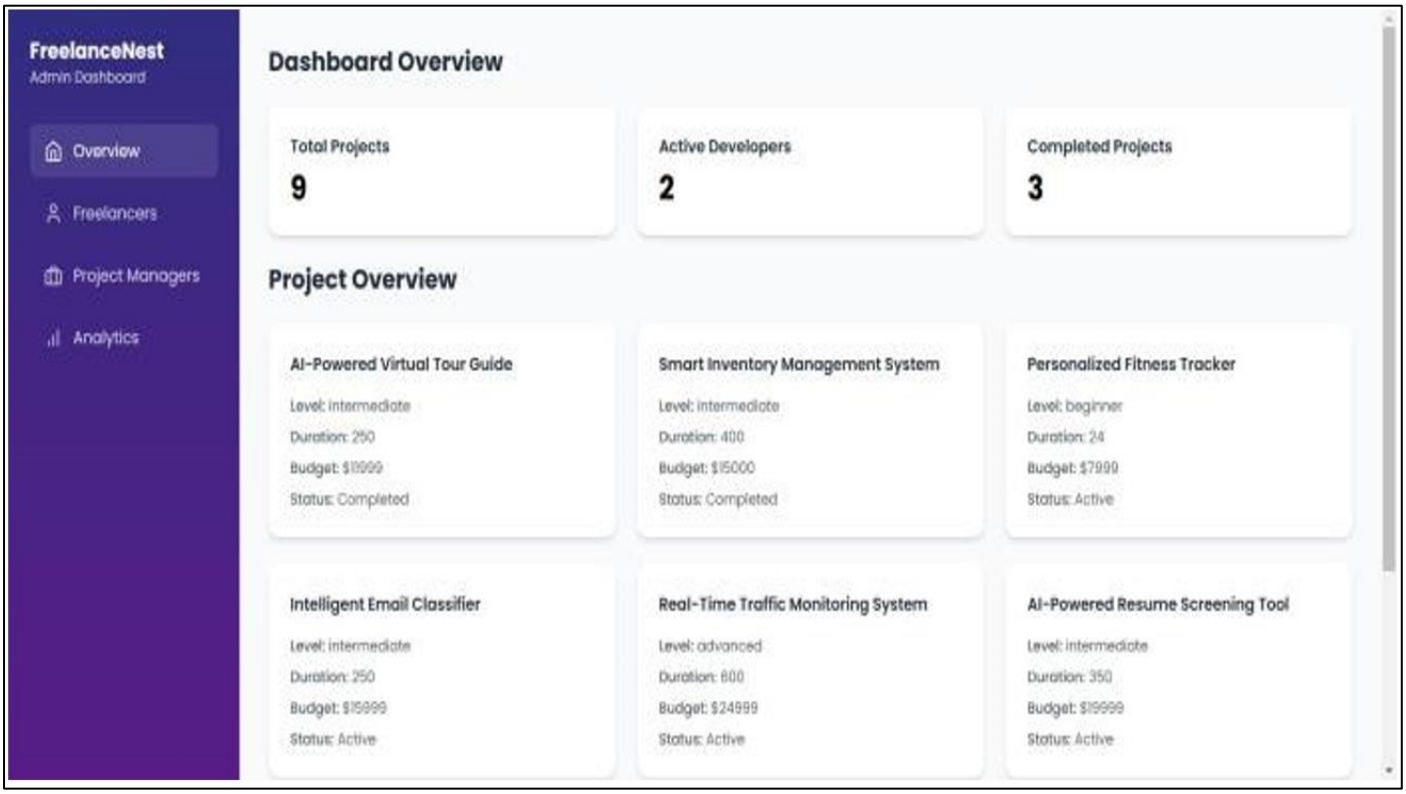

Fig 3 Admin Dashboard

This screen shows project manager where he can either accept or reject the candidate based on the first round of assessment through AI feedback.

VI. RESULT AND OUTCOME

The implementation of the Freelance Nest platform led to the successful development of a responsive and secure webbased application tailored for managing freelance projects. The system incorporates robust login functionality with role-based authentication, allowing seamless access for both freelancers and project managers. A centralized admin dashboard enables efficient oversight of user accounts, project postings, task assignments, and overall system activity. Extensive testing confirmed the reliability, scalability, and usability of the platform, with performance benchmarks showing low latency in data retrieval and high responsiveness under concurrent user loads. User feedback highlighted improved workflow management, enhanced collaboration, and reduced administrative overhead. Overall, the platform demonstrates its potential as a comprehensive solution for freelance ecosystem coordination.

VII. DISCUSSION

The development of Freelance Nest highlights the importance of integrating usability, security, and scalability in modern web-based platforms. The layered architecture enabled clear separation of concerns, which improved both maintainability and performance. Real-time feedback from users emphasized the platform's effectiveness in simplifying freelance project coordination, though it also revealed areas for future enhancement, such as improved notification systems and integrated chat features. Overall, the project demonstrates how thoughtful system design can address the practical needs of remote collaboration in a growing freelance economy.

VIII. CONCLUSION

FreelanceNest redefines the freelance hiring landscape by introducing an AI-powered platform that prioritizes skill-based evaluations and data-driven decision-making. By automating assessments, generating project-specific coding challenges, and providing objective feedback, the system addresses major pain points in traditional freelance recruitment—namely, talent mismatches, biased evaluations, and inefficient hiring processes. Freelancers are empowered with a fair opportunity to showcase their skills, while project managers gain reliable insights to make informed hiring choices. With a scalable architecture built using React.js, Python, FastAPI, and MongoDB, and hosted on AWS, FreelanceNest ensures performance, security, and adaptability. The platform not only enhances the quality and efficiency of project collaborations but also sets a new standard for transparency and meritocracy in the freelancing ecosystem.

FUTURE ENHANCEMENT

In the future, FreelanceNest can be enhanced by integrating advanced AI-based matching algorithms to better connect freelancers with suitable projects based on their skills and past performance. A mobile application can be developed to improve accessibility and real-time project updates. Additional features like secure payment gateways, built-in communication tools (chat or video), and automated

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep039

contract generation can further streamline the workflow. Integration with third-party tools (e.g., GitHub, Google Docs) would enhance collaboration on technical and content projects. Finally, incorporating data analytics dashboards can provide managers and freelancers with insights into productivity, deadlines, and overall project performance.

REFERENCES

[1]. Jaser, Z., Petrakaki, D., Starr, R., Oyarbide, E., Newton, B., Williams, J. (2021). Artificial Intelligence (AI) in the job interview process: toolkit for employers, careers advisors and hiring platforms.

[2]. Mahmoud, A. A., Shawabkeh, T. A., Salameh, W. A., Al Amro, I. (2019, June). Performance predicting in hiring process and performance appraisals using machine learning. In 2019 10th international conference on information and communication systems (ICICS) (pp. 110-115). IEEE.

[3]. Chen, Z. (2023). Collaboration among recruiters and artificial intelligence: removing human prejudices in employment. Cognition, Technology Work, 25(1), 135-149.

[4]. Saad, M. F. M., Nugro, A. W. L., Thinakaran, R., Baijed, M. (2021, December). A review of artificial intelligence based platform in human resource recruitment process. In 2021 6th IEEE International Conference on Recent Advances and Innovations in Engineering (ICRAIE) (Vol. 6, pp. 1-5). IEEE.

[5]. Mahomodally, A. F. H., Suddul, G. (2022). An Enhanced Freelancer Management System with Machine Learning-based Hiring. Humanities, 9(3), 34-41.

[6]. Suen, H. Y., Hung, K. E. (2023). Building trust in automatic video interviews using various AI interfaces: Tangibility, immediacy, and transparency. Computers in Human Behavior, 143, 107713.

[7]. Hassan, S. Z., Salehi, P., Røed, R. K., Halvorsen, P., Baugerud, G. A., Johnson, M. S., ... Sabet, S. S. (2022, June). Towards an AI-driven talking avatar in virtual reality for investigative interviews of children. In Proceedings of the 2nd Workshop on Games Systems (pp. 9-15).

[8]. Kelan, E. K. (2024). Algorithmic inclusion: Shaping the predictive algorithms of artificial intelligence in hiring. Human Resource Management Journal, 34(3), 694-707.

[9]. Boudjani, N., Colas, V., Joubert, C., Amor, D. B. (2023, May). Ai chatbot for job interview. In 2023 46th MIPRO ICT and Electronics Convention (MIPRO) (pp. 1155-1160). IEEE.

[10]. Dnyaneshwar, K. A., Poonam, G. (2024, June). AI-Driven Insights: Personality Evaluation in Asynchronous Video Interviews for Informed Hiring Decisions. In 2024 IEEE International Conference on Information Technology, Electronics and Intelligent Communication Systems (ICITEICS) (pp. 1-6). IEEE.