IJARCCE



International Journal of Advanced Research in Computer and Communication Engineering Impact Factor 8.102 ∺ Peer-reviewed & Refereed journal ∺ Vol. 14, Issue 4, April 2025

DOI: 10.17148/IJARCCE.2025.14474

AI-Powered Freelancing Applications: A MERN Stack Approach to Dynamic Workforce Management

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Abstract : Freelancing platforms are essential in providing linkages between clients and independent experts thanks its features like project matching, payment jobs and evaluation. This work is primarily concerned with designing an AI based freelancing platform, which is expected to improve scaling, customization, and overall efficiency of operations. In turn, the system aspires to use AI-based systems to automatically recommend projects, implement dynamic pricing, and map freelancers' skills more accurately to client requirements. A comparative analysis of the above objectives illustrates the benefits of AI technologies in increasing user activity and improving the accuracy of service provision. The paper also provides an analysis of the problems related to the use of AI and the various possible future directions such as the use of blockchain technologies as a mean for transaction execution and predictive demand forecasting. Through surveys of freelancing platforms, many stakeholders see both promise and the threat in the deployment of AI solutions.

Keywords: Freelancing Platform, AI Integration, Skill Matching, Scalability, Predictive Analytics

1. INTRODUCTION

A Freelancer This MERN stack Web Application enhances freelancer-client project work through its robust project management features that deliver better services for freelance services. Through AI-based capability the system automatically recommends freelancers and automates bidding and pricing mechanisms to speed up project acquisition and protect project clarity and operational excellence. The system delivers enhanced tracking performance through its advanced AI features which enables automatic processes that guide users beyond manual selection of choices and fixed pricing systems. The system provides clients a way to work with freelancers who receive skill- based evaluation before performance assessment and professional experience evaluation for better candidate screening.

The platform reaches better system performance thanks to its real-time communication and milestone tracking along with authentication security and dependent task management systems. Before automatic task scheduling takes effect the system uses AI to identify candidates whose skills match the requirements. Through its AI- based system business performance is achieved by assessing crucial freelancer abilities and job difficulty together with work duration to establish initial payment levels that protect the financial position of both professionals and their clients. Through freelancing workers gain various projects and their flexibility to accept transferred tasks as well as partnership possibilities to create revenue-sharing teams who handle intricate assignments.

AI-based cloud infrastructure tools enhance supervisory capabilities for freelancers by utilizing networked systems for freelance order management. The integration of smart freelancer through project tracking systems and automated scheduling along with features leads to improved systems that make the platform more usable. AI technology integrated with cloud-based systems enables strategic freelance solutions to provide advanced delivery capabilities with high efficiency together with scalable services and smooth system functions and elevated accessibility. Communication between frontend and backend databases ensures real-time updates, secured transactions, and client-oriented projections driven by the AI engine. The model uses Natural Language Processing (NLP) to treat freelancer profiles, project descriptions, and skill lists as structured data while performing AI-based recommendations. This AI model is fed real-time information from historical data, user interactions, and market trends for continuous training and self-learning and iterates its learning processes in this system



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Functionality	Description	Implementation
Freelancer Profile Management	Store and manage freelancer information, including skills and past projects.	MongoDB for data storage and AI for skill-based categorization
Project Assignment	Match freelancer based on skills, experience and availability	Integrated with NodeJS for matching logic.
Performance Tracking	Monitors freelancer performance and provides real- time analysis.	AI-based analytics with data visualization in React.js.
Price Biding Management	Manages freelancer work price based on their project needs and time required	MongoDB for storing the contracts and AI for automating price amount generation.
Team Collaboration	Provides the freelancer to collab with other to complete specific task	AI-based model prediction based on the variable data

TABLE I. Functionalities of Freelancer with AI

TABLE II.	System	Features an	d Advantage
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2.		
Feature	MERN Stack Advantages	
Full-Stack Javascript	Enable development across the stack Using JavaScript.	
Scalability	MongoDB NoSQL structure supports scalability for managing large datasets.	
Real-Time Interaction	React enables dynamic user Interfaces with real-time updates.	
RESTful API Integration	Node.js and Express.js provide robust API endpoint for the communication between client and server.	
Fast Development	Reusable React components And Node.js libraries speed up development cycles.	



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RELATED WORK

- Vaishnavi [1] has worked on the implementation of MERN stack in web-based freelancing platforms to understand its usage for better management of functionalities with respect to freelancing. This work is specially directed towards robust backend technologies so as to make a platform operate smoothly.
- Dewi et al. [2] introduced PeC-Net, a freelancing platform for individual students, improving the access of jobs for students. The niche-specific markets on the platform demonstrated proof that it had the capability to increase user engagement and results through better meeting of targeted user needs.
- Mahomodally and Suddul [3] had proposed a "Freelancer Management System with Machine Learning Hiring, which in fact reveals how algorithms that are AI- driven may be used to improve the effectiveness of hiring as well as enhance task allocation for utilization in freelancing applications. Their actual research underscored how machine learning is becoming an increasingly vital aspect in the digital hiring processes.
- Kaur et al. [4] interested to the "Online Freelancing Website with usability and scalability problems had a user- centric approach laying foundation for understanding how a website's design impacts on a user's satisfaction".
- Jouanneau et al.[5]described new freelancer-project matching algorithm, particularly in a multi-lingual work context. The work highlighted some of the need for matching in skills in order to push the job success rate; it also dew out several challenges involved in integrating diverse group for freelancing into global marketplaces.
- Ismail et al. [6] demonstrated how machine learning enhances job relevance as well as project allocation in freelancing sites, while underlining advanced technologies for platform efficiency. As a result of the study, it would seem that the data- driven approach actually did better matches with improved job satisfaction outcomes for freelancers and employers for the working system.
- Yiu et al. [7] surveyed AI-based innovation in strategic positioning and performance for freelancers. Hence, this study explains how AI can revolutionize approaches at freelancing work by allowing them to use data-informed approaches towards better performance.
- Li et al. [8] especially emphasized knowledge management performance in freelancing systems, particularly API communication technologies. The study introduces the importance of effective technological frameworks to improve the functioning of the platform.
- Yazıcı et al. [9] analyzed the nexus of freelance work with cybersecurity issues and the platform used in crisis communication during COVID-19. The outcome of this work was that new directions in conducting research on protecting online systems, within which resilience in times of global crisis should be found.
- Nawaz and Gomes [10] approached the trend of using AI chatbots as recruiters in freelancing and other hiring platforms. They mentioned that AI-based systems alter talent acquisition, more accurate, scalable, and efficient in candidate identification while reducing the hiring time cycle.
- Dewi et al. [11] introduced The Freelancer Application, a platform set to leverage beyond traditional job-seeking for students. Their work threw light upon how niche-specific markets compel more user engagement with job accessibility, thus substantiating the need for the system of the targeted freelancing solutions.
- Styawati et al. [12] presented a web scraping methodology for summarizing information from freelance job websites based on the Vector Space Model. Their work has shown that AI-supported summarization in a fully automated manner greatly supports freelancers in system.
- Aziz and friends [13] are building a BERT-based deep learning chatbot to improve freelancer and project matching on Indonesian freelance sites. This study aims to improve project recommendations and encodings using deep learning models, especially RNN and LSTM. An analysis of project allocation of AI exploring interaction of freelancer-client matching shows that transformer models can optimize this area. A project allocation analysis using AI showed that interactions in freelancer-client matching can be optimised using transformer models
- Joshi et al. [14] investigated dynamic pricing of freelancing platforms using machine learning models like Random Forest Regressor and various heuristic algorithms. The researchers focused on offering proper pricing to freelancers, especially student freelancers, using a pricing mechanism based on deadline setting. The research shows how the data pricing improves the fairness of the remuneration with respect to complexity of the project type and demand in the market.

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3. METHODOLOGY

The research for freelancers get matched using AI, with dynamic pricing and real-time collaboration incorporated, bringing efficiency to the freelancing ecosystem. NLP, a natural language processing model, evaluates the freelancer's skills to make appropriate project assignments. Machine learning spreads the project complexity, experience, and duration to suggest apt prices. The system itself is built on React.js, Node.js, and MongoDB that allows collaboration, milestone tracking, and through scalable processes. An automated task roadmap ensures structured project execution by prioritizing prerequisite tasks. The role-based dashboards ease navigation for clients, freelancers, and administrators. The AI-enabled alternative enhances decision-making, assists in selecting a freelancer efficiently and helps complete a project within time and possible resource for the proposed system methodology.

3.1 Proposed System

The system enhances the matching of client freelancers for efficient project warding and to ensure fair prices. The farther refined process evaluates the freelancer profile on the basis of skills, experience, and prior work to deliver appropriately matching projects. A verification process mechanism was applied to filter out the inconsistencies and improve the accuracy of the final selections. Continuous data assessment keeps project recommendations relevant by considering market trends and freelancer activity, allowing adaptability to industry demands. Additionally, the system includes automated task roadmaps that guide freelancers through structured project execution while ensuring prerequisite tasks are completed. A well-defined decision-making and bidding process optimizes freelancer selection and negotiations, making the process more effective. By incorporating predictive analysis and structured skill evaluation, the platform fosters a transparent, unbiased, and scalable freelancing environment that improves collaboration and simplifies the hiring process of the system proposed .

3.2 System Architecture

The system consists of three main modules being the body, the back-end server, and the ML-based recommendation engine. The front-end interface is implemented in React.js, extending the interface for clients, freelancers, and administrators. Clients may post opportunities by regarding it on freelancers' proposals, and negotiate; while freelancers will be able to view proposals, make bids thereon and negotiate. The admin may administer user activity, ownership of projects and analysis of bids. The back-end server, which is built in Node.js and Express.js, is responsible for procedural data processing, user authentication, and offering the business logic. Data would be stored on and run on MongoDB for large storage and retrieving of projects, freelancer bids applications, and bids. AI engine based on processing natural language advises a client on most suitable allies based on their project requirement. It finds the most suitable freelancers after considering their previous experience, talent, and complexity of the project is used for system architecture.

The system also integrates real-time communication for clients and freelancers to be able to discuss project details when the project is running. An automated project roadmap keeps a record of the project milestones and regulates the development process. The system components function hand in hand to provide an efficient AI-enhanced freelancing



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platform to optimize project allocation



Fig 1.1 Design flow of Freelancing Application

Table III: System Components and Technologies

Component	Technology Used
Frontend	React JS , CSS
Backend Node.js	Node.js ,Express.js
Database	MongoDB
AI Model	Hugging Face
API Handling	REST APIs, Axios

4. IMPLEMENTATION

The proposed freelancing application is based on the MERN stack, enhances the process of freelancer-client interaction using AI for skill matching. It processes profiles of freelancers, descriptions of projects, and bidding details to allow appropriate project allocation. The backend is realized with Node is and Express is, handling user authentication, project management, and bidding. The data regarding projects, applications made by freelancers, and the whole bidding process is stored in MongoDB efficiently. The first stage starts with the posting of projects by clients. The details of the project with the special skills that are needed and the budget are recorded. Freelancers are able to see available projects and apply based on expertise along with the submission of their bidding. The AI-driven recommendation engine recommends the best freelancers to the clients in compliance with skill parity and experience. Negotiated bidding allows clients and freelancers to negotiate on project terms and arrive at a just price so a project can be efficiently completed. The system seamlessly integrates real-time communication via Web Sockets to enable both clients and freelancers to establish an interactive communication channel. An automated project roadmap keeps track of project milestones to allow structured development and completion in time. Admin functionalities allow user activities to be monitored, project statuses to be checked, and the system as a whole to be managed. The architecture used for such an implementation leverages the power of a scalable cloud- side that guarantees high availability, security, and efficient data handling, thus streamlining the entire freelancing ecosystem. A review and rating mechanism whereby both clients and freelancers can review each other with respect to a particular project. This feature will ensure enhanced trust and credibility within the platform and provide a mechanism to weigh quality delivery. Pretty much all evaluation will now be accomplished publicly, which enables

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International Journal of Advanced Research in Computer and Communication Engineering

Impact Factor 8.102 $\,\,symp \,$ Peer-reviewed & Refereed journal $\,\,symp \,$ Vol. 14, Issue 4, April 2025

DOI: 10.17148/IJARCCE.2025.14474

users to make informed choices when hiring freelancers or posting jobs. This will maintain quality standards, accountability, and reliability for the freelancer ecosystem.

Criteria	MERN	Node.js with Express	React with Integrati on
	Stack		
			Node.js, Express.js
	Java script across	Java script (Angular for	backend, Java script for
Language	the stack	front- end)	frontend
	High due to non- blocking	High(optimize d middleware	High with optimized AI
Performance	Nodejs	routing)	Libraries
	Easily scalable with	Scalable with Express	Scalable with react
Scalability	MongoDB	clustering	components
	Moderate for Beginners	Moderate to advanced	Moderate for frontend
Learning Curve			developers
		Extensive Node.js and	Growing React
Community Support	active community	Express community	+ AI libraries community
User Experience	Highly interactive	Efficient for API- heavy application	Dynamic UI with AI-based personalization
Response Time	150–200 ms	100–150 ms	150–250 ms
Database Speed	High (MongoDB)	High (NoSQL or SQL)	Moderate (depends on DB selection)
Integration Support	Extensive	Moderate	Moderate for integrating AI services
Real- Time Updates	Excellent (WebSocket)	Moderate	Limited

TABLE III. Analysis of MERN With Alternative Stacks

TABLE IV. PERFORMANCE OF VARIOUS METRICS USINGMERN

Metric	Definition	Performance	Advantage
Scalability	The ability of the system to handle increasing number of users and data	High Scalability due to MongoDB and horizontal scaling	Handles multiple teams with dynamic workloads.
Real-Time Updates	Synchronize of changes across clients in real time.	Achieved using Web Sockets or libraries like Socket.IO.	Enables instant updates for attendance .
User Experience (UX)	Ease of navigation, speed, and interaction quality.	Highly interactive due to React dynamic component system.	Provides smooth, responsive interfaces.
Deployment Flexibility	The ability to deploy on various environments (cloud/on- premises).	Compatible with cloud and on premises deployment models.	Deployable on both cloud platforms and local server for client .flexibility
AI Model perform	Efficiency of AI computations Like inference and training	Tensorflow. enables lightweight AI in Nodes.js	Allows realtime ,on device AI without heavy infrastructure



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Modules

The Freelancing Web Application covers three modules: Client, Freelancer, and Admin. The Client module supports the posting of jobs, selection of freelancers, bidding and communication in real- time. Clients could review freelancer applications, negotiate bids, and track their progress using structured workflows. The module for freelancers seeks professionals to browse projects and to apply to them, negotiate bids and track milestones, making use of an automated roadmap. Freelancers can collaborate with each other if need be. The admin is charged with user management, project-tracking, bid-monitoring, and overall functionality for seamless operational support. Integrating AI- based recommendation, NLP, and machine learning enhance the candidate match for better recommendations based on skills, experience, and project specifications.

5. RESULT AND DISCUSSION

Decision-making and skill evaluation through NLP will greatly enhance this AI freelancing technology's freelancer matching to the clients, bidding, and project execution. It will allow processes that suit the freelancer's skills to match with the client's requirements accurately, thus eliminating false project assignment. The real-time communication tools will allow an easy flow of communications between the client and freelancer, facilitating easy completion of the project. With regard to dynamic pricing, this should also provide a fair remedy since it will analyze the complexity of the project and the level of expertise of the freelancer, thereby allowing for mutually beneficial negotiations. Regular user interaction on this platform would help improve matching relevance and project success. The systematic assignment roadmap would ensure that the projects are administered well, considering milestones that ensure efficiency in project execution. It will provide a freelancing context that is organized, which will lessen manual workload on the client and freelancer indecision-making.

Finally more improvements can be devised to offer a better handling of projects and enhance user experience in terms of scaling, safety, and automation. Improving the implementation of next-gen AI suffice to refine freelancer selection further, project pricing, and system performance, thus creating a more transparent and effective freelancing platform.

5.1.Observations

Real-world testing was conducted in this project to validate the AI-enabled freelancer matching system, whereby the system analyzed freelancer profiles to predict their fit for several projects. This elicited an analysis to derive matching recommendations for bidders, in compliance with an accuracy score that included skills, experience, and project requirements parameters. The output of this assessment involving matching precision evidence and bid optimization and project allocations are provided in Table V. Such observations help improve the AI model by ensuring the better selection of freelance workers and effective decision- making for the client.

Freelancer	Skills	Required Skills	Match Score (%)
Freelancer	HTML,	HTML,	
	JavaScript, CSS,	JavaScript, CSS	89%
	MERN	_	
Freelancer2	Power BI, Tableau, J	avaJava , Matlab, C#	
			32%
		JavaScript, React JS	
	MATLAB,		25%
Freelancer3	C++, Java		

	Table V: Career	Predictions	and Confidence	Levels
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The outcome of the model shows different match scores, which represent the relationship between the skills of the freelancers and their project requirements valid in its AI prediction system. The model identifies the right freelance workers, with a match score above 50% being the most compatible with project needs. Higher match scores signify a higher likelihood of project success due to better skill relevance for this proposed system.

5.2 Evaluation Metrics

The matching model of freelancers was evaluated using precision, recall, and the F1-score metrics for verifying its accuracy in predicting suitable freelancer- project pairings. The precision score of 76.4% indicates the model's capability to match freelancers accurately, while the recall score of 73.7% elucidates on how good it was at identifying all suitable freelancers for a project. The F1-score of 75.0% offers a mix between both, showing its reliability in complex situations. A test set of freelancing profiles and project descriptions was analyzed to validate the predictions. Further validation performed tests on real project data and corrected the suggestions made by AI according to the input received from clients and freelancers and hence could improve the accuracy of matching. Additionally, the model dynamically adapts to market trends and evolving skill demands, improving its prediction accuracy over time.

6. **PERFORMANCE**

The AI-powered freelancer-matching engine in the platform integrates the project demand with freelancer profiles to make accurate suggestions. The model integrates natural language processing-based skill analysis with machine learning models for precise recommendations that guarantee the best-fit freelancer. The more engaged a freelancer is with the platform, the more accurate predictions it can produce for project allocations and hence, continue to create a more efficient environment. Such suggestions will enable freelancers to upskill themselves regularly through learning resources tailored to the demand in the market. Clients will benefit from the intelligent matching system which provides an easier method of hiring while improving collaboration between them and the freelancers. Such a system will also point out major areas where improvement could occur, including diversity in skills categorization, and governance surrounding ethical AI is one. The results of that are demonstrated in Table VI is below content.

Freelancer	Skills	Designation	Confidence (%)
Freelancer	HTML, JavaScript, CSS, MERN Technology	Frontend Developer	52%
Freelancer2	Power BI, Tableau, HTML	Embedded Engineer	31%
Freelancer3	MATLAB, C++, Java	Software Engineer	55%

Table VII: Freelancer Predictions and Confidence Scores

The AI-based bid prediction engine in the platform uses client project data and freelancer capabilities data to recommend competitive and fair bid prices. The bid prediction engine utilizes both a gradient-boosted regression model and a deep learning RNN-based enhancement layer covering extensive modeling of both structured numerical inputs and sequential skill habits. The predicted hybrid model develops intelligent pricing suggestions based on freelancer skills, past project completions, and client ratings. As freelancers completed projects with the platform, with annual workloads of 20, 40, or 80+ projects, the platform would improve its suggestions around per project pricing for all its freelancers, creating transparency and efficiency. Clients received data driven bid suggestions based on both market trend in bidding and freelancer experience, allowing for lower friction in negotiations. The model ultimately helps foster informed decisions by exposing pricing gaps and pushing freelancers in developing a skill set in potentially high market driven value areas. The insights results from the system are critical in hiring strategies decisions and in keeping ethical behavior



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Impact Factor 8.102 $\,st\,$ Peer-reviewed & Refereed journal $\,st\,$ Vol. 14, Issue 4, April 2025

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involved with employing automated pricing systems. Those results are shown in Table VII in the content below.

Freelancer ID	Predicted Bid	Submitted Bid	Rating
Freelancer	11,000	11,900	Satisfactory
Freelancer2	10,950	11,000	Satisfactory
Freelancer3	10,350	10,000	Excellent

Table VIII : Freelancer Bid Predictions and Rating Scores

The Task Prediction Engine leverages Google's Gemini AI model to predict high-level tasks connected to a variety of job roles. The system is set up to submit a job title to the Gemini API via an structured prompt. The response is a formatted list of main processes (or first level responsibilities) associated with that title. It does not include descriptions, subpoints or more specific details. The system processes the response, draws out tasks like: "list tasks", and formats into as clean a numbered task list as possible. The engine is executed by a small Python script that manages the API interaction along with the construction of the request payload, error control, and uses another part of the script to parse the list of tasks in the response. By looking at the task patterns between the job categories, the platform can offer insights into what a freelancer can expect from the job responsibilities. Our goal is to help freelancers in terms of skills development and preparing to perform in the expected role.

Table IX :	Task Prediction	Based on	Project 1	Requirement
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Project	Predicted Task	Expected Task	Accuracy %
Data Science	8	8	95.7%
Full Stack	7	8	87.5%
UI Design	9	9	96.8%

6.1 **Performance Evaluation**

The system maintained a real-time response speed of 100 to 150 milliseconds, allowing smooth user interactions without noticeable delays. Faster execution of database queries was achieved by a drastic 32% speed-up through the combination of indexing within MongoDB with caching that works on the basis of artificial intelligence. The AI- driven freelancer recommendation model achieves on average, an astonishing prediction confidence of 75%, which is quite impressive for measuring the degrees of fitting of freelancers to projects. The effectiveness of the MERN stack with AI has thus been instrumental in building a scalable and easily deployable in platform based system.

Hence, the depicted metrics through Fig. 1.1 give insights into significant performance aspects which include freelancer matching accuracy, response time, confidence score, user satisfaction, and error rate. Prediction accuracy has been achieved at 75%, with response time having been optimized to some 83 ms, which would ensure quicker recommendations for freelancers. User satisfaction was accordingly marked at 70% as good experiences, and error rates were just above 20%, leaving room for improvement in future processes.



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Fig 1.1 Design flow of Freelancing Application

The AI-based bid prediction system's goal of modifying freelancing bidding behavior to align with market rate expectations to lessen variance and make negotiation processes easier, as introduced in Section VII, performed exceptionally well. As shown in Table VIII, real submitted freelancer bids were closely mirrored by the predicted bids, and the variances were kept seriously to a desired tolerable range of $\pm 10\%$ in all cases. This insistence on consistency means the model accurately learned from not just the historical bidding data but also from the freelancer experience and project trend, if they were able to find a closet fit for intelligent guesses. Freelancer3 not only predicted a bid that was also the "excellent" result, but it validated model sensitivity to profiles performing good to excellent based on bid prediction. The training with model rating scores and location with genuine bid predictions add another layer of interpretability when reviewing multiple results from the marketplace. The bidders and clients may consider both technical (bid) and performance criteria (rating) As refered in Fig 1.2 when network and provide insights to both AI and rated profiles. This speaks to AI's role in a dual purposing; to achieve equitable savings in market place economics and enhance trust in the fairness of each bid's assurance itself. Together, these initiatives validated the reliability of the bid engine's performance and the increase in the accuracy of project costing through the structure and assumptions offered on the platform.



Fig 1.2 Design flow of Freelancing Bid AI

The Task Prediction Engine is able to predict a high-level task for a variety of jobs using Google's Gemini AI model with strong performance. After a job title is submitted, the Task Prediction Engine interacts with the Gemini API instance (agency) using a prompt that provides context to generate a clean list of primary responsibilities with no extraneous subpoints or narratives. The Python execution layer handles all API requests, payload creation, error handling, and output parsing to create a task page that lists tasks organized in a consistent way. Throughout all testing done, the Task Prediction Engine consistently predicted relevant tasks with a high degree of reliability and accuracy letting freelancers know what to expect when representing the scope of responsibilities for a contracted job. Overall refered in Fig 1.3, due to the lightweight design of the Task Prediction Engine there should not be excessive response times, ensuring task retrieval happens quickly. Additionally, the Task Prediction Engine captures underlying task themes across job type resulting in useful insights for

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International Journal of Advanced Research in Computer and Communication Engineering

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freelancers in skill building and System



Fig 1.3 Design flow of Task Prediction AI

8.FUTURE ENHANCEMENTS

The freelancing platform is going to continue advanced AI implementations in precision, human resource- friendly, and engagement. Future development would include real-time project recommendations, delivered via the artificial intelligence mechanism, matching their merit to labor market supply for an assured project suggestion volume realistic to a respective freelancer in relation to current industry trends. Futuristically, improved NLP stemmed enhancements would allow effective communication between the clients and freelancers. The process evolution of freelancing platforms is poised to move beyond their current project bidding process by implementing increasingly sophisticated artificial intelligence that will completely alter the way freelancers access work. In the forefront, AI-powered bid prediction models will allow freelancers to determine the likelihood of winning individual projects with an astonishing level of precision. These learning-based artificial intelligence systems will incorporate millions of dynamic signals, including: previous bid wins (or losses), client tendencies to hire, market rates, skill suitability, freelance reputation, and bid deadlines. Soon, freelancers will get real-time bid success evaluations found in their project feeds in real-time. For example, based on current market analysis, there will be recommendations or evaluations for projects such as win probability, suggested bid amounts, and suggested bidding windows. The suggestions and recommendations will continuously evolve through deep learning by factoring all prior suggestions, individual freelancer bidding pattern analysis, platform ecosystem changes, and changing client demand.

V CONCLUSION

This research identifies a role for AI-based freelancer-client matching that helps to further match project assignments, thus progressing collaboration within a freelance ecosystem. The system conducts the matching of freelancer skills to the client's project requirements systematically, thus assisting with intelligent hiring decisions. An additional capability as an offshoot is capacity enabled for predictive bidding through AI by reviewing project trends, freelancer profiles, and historical data to predict the probability of winning individual bids—enabling freelancers to submit higher-quality, competitive proposals. Instinctively this favours users via intelligent AI suggestions but what still restricts engagement is the capacity for flexibility to manage changes in a dynamic industry or real-time market transformations. This behaviour of matching is only intended to address performance, engagement, and use of analytics as primary parameters through a series of intelligence solutions. While these ideas are developing, the MERN stack with artificial intelligence and real-time bid prediction artificial intelligence models represents an attractively built solution for freelancers to deliver modern, data-driven applications that meet the ever-growing demand of a digital world.

Impact Factor 8.102 😤 Peer-reviewed & Refereed journal 😤 Vol. 14, Issue 4, April 2025

DOI: 10.17148/IJARCCE.2025.14474

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