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Freelance Marketplace Platform with Profile Verification Bidding and Dispute Resolution

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ABSTRACT

The rapid growth of digital freelancing has transformed the way clients and skilled professionals collaborate across geographical boundaries, creating new opportunities for remote employment and global service delivery. However, existing freelance marketplaces continue to face several challenges, including fake user accounts, unverified freelancer profiles, fraudulent job postings, non-transparent bidding processes, and inefficient job allocation mechanisms. These issues reduce platform reliability, increase the risk of scams, and weaken trust between clients and freelancers. Additionally, the absence of structured verification, secure communication, and effective dispute handling often leads to conflicts, delayed project completion, and poor user experience. These limitations highlight the need for a secure and transparent freelancing platform that ensures authenticated participation and efficient project management. The proposed Freelance Marketplace Platform with Profile Verification, Bidding, and Dispute Resolution (FMP-PVBDR) introduces a centralized web-based solution that implements Role-Based Access Control (RBAC) to support administrators, clients, and freelancers. Newly registered users undergo administrative verification before accessing platform services, ensuring profile authenticity and minimizing fraudulent activities. Clients can post project requirements with budget details, while freelancers submit competitive bids based on pricing and estimated completion time. Developed using React JS for the frontend, Django REST Framework for backend API development, and MySQL for data management, the platform provides secure communication, structured bidding, and efficient project coordination. Its modular architecture supports future enhancements, including online payment integration, dispute resolution, freelancer ratings, and performance evaluation, thereby improving transparency, operational efficiency, scalability, and user confidence in digital freelancing ecosystems.

Key words: Role-Based Access Control (RBAC), Profile Verification, Competitive Bidding, React JavaScript (React JS), My Structured Query Language (MySQL), Application Programming Interface (API).

1. INTRODUCTION

In the last two decades, new and contemporary occupational concepts have emerged in relation to general developments in information technology and the reorganization of work arrangements in the wake of digitalization. Digital technologies have made it possible for many things to be done online or remotely, and for work to be broken down into smaller components called research. Individuals are expected to become increasingly mobile and self-determined in terms of their careers, in contrast to traditional careers characterized by hierarchical advancement, organizational career management, and low mobility [1]. These

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flexible work schedules are often referred to as nonstandard, and are performed by independent contractors called freelancers. In this paper, we use the term freelancers to refer to independent contractors of businesses without employees who do not want to grow [2].

We aim to examine the role of this particular type of entrepreneurial category of self-employment and their quality of life in terms of subjective (job and career satisfaction and life satisfaction) and objective (income satisfaction) success. Quality of life refers to the nonfinancial dimension associated with job satisfaction and life. In terms of work, quality of life refers to time and the opportunity to do what we enjoy [3]. Different jobs and occupations (careers) and working conditions are also important aspects of quality of life. Different types of jobs may require workers having to work under extreme stress or repetitive work. On the other hand, flexible work arrangements can provide professionals with more autonomy to perform their jobs [4].

In the past, career success was generally measured objectively (as wages, promotions). Today, however, new technologies and the changing nature of business are leading to a shift in the way success is viewed, and more importance is being placed on the more subjective component. According to [5], one of the most important resources affecting quality of life is satisfaction with work–life balance (i.e., the extent to which people feel they have control over their lives). In workplaces where people have a high degree of control over their working hours and other aspects of work, they tend to be more satisfied with the balance between their personal and professional lives [6,7]. This relationship is usually explained by the fact that these individuals are better able to balance the spheres of work and nonwork because of their greater control over work. This raises the question of the quality of life of nonstandard workers the freelancers. Since there is no scientific work and research on this topic in Slovenia yet, we first examined the selected demographic characteristics of freelancers in Slovenia, such as educational level, age, profession, work experience, and gender.

2. LITERATURE SURVEY

Tronconi et al. [8] aimed to compare and analyze the freelance and employment models for riders in different European countries in terms of social sustainability, i.e., work motivation and labor rights. To reach this goal, two activities were performed. On the one hand, qualitative interviews with German and Italian riders were carried out. On the other hand, a dynamic metaheuristic algorithm was developed and implemented to simulate an employment model with a central provider that managed order requests in real time. The qualitative interviews indicated that riders' motivations differed between freelance riders and employed riders: freelance riders did feel more controlled. Lukac et al. [9] used an empirically validated agent-based computational model to investigate the extent to which reputation systems could create segmented hiring patterns that were biased toward freelancers with good reputation. They explored how jobs and earnings became distributed on a stylized platform, under different contextual conditions of information asymmetry. Their results suggested that information asymmetry influenced the extent to which reputation systems might lead to inequality between freelancers, but contrary to expectations, lower levels of information asymmetry could facilitate higher inequality in outcomes. Ren et al. [10] conducted one of the few studies that addressed how freelancers' characteristics impacted the likelihood of being

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hired by employers using the theory of person–environment fit as a broad framework. Using Freelancer data, this research investigated whether country of residence (of a freelancer and the employer), amount earned, and time since registration on the platform were associated with the employment decision. The results indicated that country of residence did matter. Freelancers who tended to be from the same country as the employers were more likely to be hired. Likewise, high-income freelancers were less likely to be hired. Further, longer presence on the platform influenced the association between income level and likelihood of being hired.

Gussek et al. [11] examined the challenges of IT freelancers and synthesized them. They extended the challenges of online freelancing already outlined in the literature and identified four IT-specific challenges for IT freelancers. Therefore, they improved understanding of how IT work was performed on digital labor platforms and which particular aspects should be considered in future research. Furthermore, they highlighted implications for practitioners, i.e., IT freelancers on the one hand and platform owners on the other hand. Zhang et al. [12] suggested that attention to the needs of different groups of platform workers, their diverse identities and interests, and to labor equity and social protection was key to the sustainable development of the platform economy. The authors noted that future research could further priorities cross-regional differences, algorithmic governance (including emerging technologies), the effectiveness of regulatory and organizational innovations in advancing labor equity and social protection, and the long-term, intersectional effects of platform labor, with a view to promoting a more inclusive and sustainable platform ecosystem. Song et al. [13] reviewed the extant literature concerning crowd-based labor platforms and proposed a conceptual model detailing the relationship between justice perceptions and turnover within the crowd-based work context. Furthermore, they identified antecedents and moderators of justice perceptions that were specific to the crowd-based work context, as well as two forms of crowd-based turnover as a result of justice violations: requester turnover and platform turnover. In doing so, they provided a novel conceptual model for advancing research on crowd-based worker perceptions and turnover.

Baitenizov et al. [14] identified the theoretical basis of freelance, its evolution, and intellectual capital as the foundation for the development of freelancing in new management and economic contexts. Based on these findings, the authors proposed the development of a multifunctional online freelance platform as a strategic initiative to support innovation-driven economic development in Kazakhstan. This paper contributed to the fields of innovation management, entrepreneurship, and the gig economy by framing freelancing as a dynamic, knowledge-intensive phenomenon with significant implications for future business models and labor market policies. Cieślik et al. [15] shed light on the growth ambitions of different segments of solo self-employed workers by analyzing their varying expansion strategies. By estimating a multinomial logistic regression model on a large sample of solo self-employed workers, the main finding indicated that high-skilled solo self-employed individuals with a proven track record (by operating solo for at least five years) did not plan to hire employees. Instead, insofar as they had expansion plans, they preferred to work together with other self-employed individuals in networks or outsource tasks to subcontractors. The study highlighted the crucial role of

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collaborative networks, particularly among high-skilled professionals operating solo.

3. PROPOSED METHODOLOGY

This research is designed as a modern, full-stack web application that facilitates secure and efficient interaction between clients and freelancers. The system introduces a centralized digital environment where job posting, bidding, and user management are performed through automated workflows. It supports role-based access for administrators, clients, and freelancers, ensuring controlled and organized operations across the platform. Profile verification through administrative approval enhances trust and accountability among users. The application manages large volumes of data related to users, jobs, bids, and skills in a structured database, enabling reliable storage and retrieval. By integrating a responsive frontend with a robust backend API layer, the platform ensures smooth communication, data consistency, and scalability. The system overcomes limitations of traditional methods by providing transparency, efficiency, and improved user experience in freelance research management.

User Interface (Web Browser – React.js): Users and administrators interact with the freelance marketplace through a browser-based interface developed using React.js. The interface provides smooth navigation for registration, login, dashboards, and role-specific operations. Clients can post and manage jobs, while freelancers can browse jobs, place bids, and manage skills. Administrators access approval and monitoring panels. React.js ensures fast rendering, responsive design, and an intuitive user experience.

Backend Server (Django REST Framework): The backend server is implemented using Django REST Framework and handles all requests received from the frontend. It manages user authentication, role validation, admin approval checks, and core business logic. The backend exposes RESTful APIs for job posting, bidding, skill management, and user administration. It ensures secure communication between the frontend and database while enforcing access control.



Fig. 1: Proposed system architecture of FMP.

Database Layer (MySQL): The MySQL database stores all platform data in a structured relational format. It maintains user profiles, roles, approval status, job postings, bids, and freelancer skills. The relational schema ensures data consistency, integrity, and efficient querying. This layer acts as persistent storage supporting all freelancing operations.

Job Posting and Management Module (Client): Clients can post job requirements by specifying titles, descriptions, and budgets. They can edit or remove their job postings based on requirements. All jobs are stored centrally and tracked with clear status indicators. This module simplifies research outsourcing and job lifecycle management.

Bidding and Freelancer Interaction Module: Freelancers can browse available jobs and submit bids with proposed cost and duration. Each bid is securely recorded and associated

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with the respective job. Freelancers can track bid status updates such as pending, accepted, or rejected. This module ensures transparent and competitive research allocation.

Bid Evaluation and Selection Module (Client): Clients can view all bids submitted for their jobs in a structured manner. They can accept one suitable bid, after which other bids are automatically rejected. Job and bid statuses are updated to maintain consistency. This mechanism ensures fair and efficient freelancer selection.

Skill Management Module: Freelancers can add and manage skills associated with their profiles. These skills help represent expertise and improve visibility to clients. Skill data is stored securely in the database and linked to freelancer accounts. This module supports professional profiling and better job matching.

End-to-End Operational Flow: The system follows a structured workflow from the React-based frontend to the Django backend and MySQL database. Each request undergoes validation, authentication, and role verification before processing. Role-based access control ensures secure interactions for administrators, clients, and freelancers. This end-to-end flow guarantees reliability, scalability, and data integrity.

4. RESULTS AND DISCUSSION

The system was successfully implemented as a web-based freelance marketplace that enables structured interaction between administrators, clients, and freelancers. The results demonstrate that the platform effectively supports user registration, administrative approval, job posting, and competitive bidding functionalities. Clients were able to post research requirements and manage job listings, while freelancers could browse available jobs and submit bids with proposed costs and durations. The administrator module ensured secure user verification and controlled access to the system.



Fig. 2: Admin dashboard page.

Fig. 2 is used to manage and monitor user registrations within the Freelance Marketplace platform. It displays separate tables for freelancer approvals and client approvals, showing key details such as username, email, mobile number, and approval status. The administrator can approve pending user accounts directly through this interface. Action buttons enable efficient control over user access and verification. This page ensures secure profile verification and controlled participation across the platform.



Fig. 3: Admin job listings page.

Fig. 3 allows the administrator to view and control all jobs posted on the Freelance Marketplace platform. It displays detailed information including job ID, client name, job

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title, description, budget, and current status. The administrator can monitor whether jobs are approved or removed through this interface. Action buttons enable the admin to remove inappropriate or invalid job postings. This page ensures transparency, quality control, and proper governance of job listings across the platform.



Fig. 4: Client dashboard page.

Fig. 4 provides clients with a centralized interface to manage their activities on the Freelance Marketplace platform. It allows clients to view their personal profile details and verify approval status. Clients can post new job listings to hire freelancers and view all jobs they have posted. The manage jobs option enables editing or removing existing job postings as required. This page supports efficient job creation, monitoring, and management for clients.



Fig. 5: Client-side my posted jobs section page.

Fig. 5 displays the detailed view of jobs posted by the client on the Freelance Marketplace platform. It allows clients to review their personal profile information and toggle the visibility of posted job listings. The table section presents job details such as title, description, budget, and approval status in an organized format. Clients can easily track the status of their posted jobs and ensure they are approved and visible to freelancers.



Fig. 6: Client manage jobs page.

Fig. 6 allows clients to control and monitor the jobs they have posted on the Freelance Marketplace platform. It displays job details such as title, description, budget, and approval status, with options to edit or remove postings. Clients can view all bids submitted by freelancers for a selected job in a structured table. The bidding section shows freelancer name, bid amount, proposed duration, and current bid status. Clients can accept or reject bids directly, enabling transparent and efficient research allocation.

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Fig. 7: Available jobs page.

Fig. 7 allows freelancers to view all active and approved job postings on the Freelance Marketplace platform. It presents job details such as client name, job title, description, budget, and current status in a structured table format. Freelancers can quickly assess suitable research based on their skills and budget expectations. The Place Bid option enables freelancers to submit proposals directly for selected jobs. This page supports transparent job discovery and initiates the competitive bidding process.



Fig. 8: Place your bid page.

Fig. 8 allows freelancers to submit proposals for a selected job on the Freelance Marketplace platform. It displays the job title, description, and budget to help freelancers make informed bidding decisions. Freelancers can enter their proposed bid amount and expected research duration in days. The submit option sends the bid details to the system for client review and evaluation. This page enables fair competition and structured interaction between freelancers and clients during research allocation.

5. CONCLUSION

This research successfully demonstrates an efficient and secure approach to managing freelance hiring through a web-based application. The system integrates a responsive React.js frontend with a robust Django REST backend to ensure smooth interaction and reliable request handling. Administrative profile verification significantly improves platform trust and reduces fraudulent activities. Structured job posting and competitive bidding mechanisms enable transparent and fair research allocation. Future enhancements may include integration of secure payment gateways to support milestone-based transactions. Rating and review systems can be added to improve credibility and accountability. Dispute resolution modules with automated workflows can strengthen conflict handling. Advanced features such as skill-based job recommendations and real-time chat can further enhance platform usability and efficiency.

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