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*Research Article*

# Task Bounty Board using Blockchain Technology

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***Abstract:*** *Task Bounty Board is a decentralized application () developed to revolutionize how microtasks are produced, claimed, and finished with the help of blockchain technology. Built upon the aground network, this platform enables clients to post tasks with enlisted rewards as ALGO tokens. Freelancers or Partakers can browse for any available tasks, claim them then submit proof of completion via IPFS (Inter Planetary File System) and will receive rewards directly via smart contracts. Our application evacuates the inefficiencies and inequity found in traditional platforms with help of smart contract-based escrow, DAO-based dispute resolution, and decentralized storage for task submissions. This establishes an environment where payments are instant, fair, and indefinite. The technical stack of our project includes React.js and Tailwind CSS for frontend, PostgreSQL and Jingo, Algoid for Smart Contracts and Pera wallet for Wallet Integration. Future improvements include user reputation tracking, and cross-chain capabilities.*

***Keywords:*** *Escrow, Indefinite, Inefficiency, Interplanetary, Partaker, Reputation.*

## I. INTRODUCTION

The freelancing market has rapidly developed, with millions of professional's attributing their skills remotely. However, traditional platforms like Fiverr and Upwork continue as centralized, where a single administrator controls data, transactions, and clashes. They assess high commissions up to 30 percent, delay withdrawals, and lack of transparency. As a result, clients and freelancers must rely on middlemen, paving way to dependency and sometimes offensive systems. To overcome all these issues, Task Bounty Board introduces a Web3-based decentralized freelancing environment built on the aground block chain. It extracts intermediaries using smart contracts that robotize payments and certify deliverables. Tasks are posted then claimed and completed smoothly, with payments released automatically after successful task completion and poof of submission. Task Bounty Board incorporates IPFS (Inter Planetary File System) for decentralized storage for proof of submission, enabling immutability and transparency. Once saved, data becomes tamper-proof and inalterably verifiable. DAO (Decentralized Autonomous Organization) governance allows freelancers to vote on disputes and platform updates, ensuring crowdsourced decision-making instead of corporate domination. With borderless involvement using crypto wallets, users can connect globally and get instant, zero-fee settlements through Algerian's fast, low-cost blockchain. By combining the doubtless technology of blockchain, the immutability of IPFS, and the autonomy of DAO, Task Bounty redefines the gig economy into a new fair, transparent, and decentralized.

Task Bounty built upon this model using Aground Layer-1, combining the smart contracts, IPFS storage, and DAO techniques for trust less microtask automation. It enables instant, affordable, and secure transactions while ensuring user autonomy. As Web3 adoption grows, Task Bounty resembles the future of freelancing that is borderless, transparent, and decentralized.

Traditionally, task accomplishment required full-time occupation with long-term agreements and fixed schedules. Employees usually had limited flexibility and had to obey strict organizational hierarchies. In many events, lower performance meant denial of opportunities and employment without transparent judgement. Our platform enables users to accomplish tasks on a freelance and remote basis as per predefined terms. Work quality and any disputes are resolved using DAO voting, where the majority votes determine the task acceptance and payoff. Blockchain technology ensures there is no purpose for any third-party middlemen, making payments secure and transparent. This system fosters fairness, autonomy, and efficient reward allocation for both task creators and seekers.

In traditional situation, wages are typically paid at the end of month or annually, regardless of the scheduled work status. Employees usually wait for scheduled pay times even if they give extra effort or complete paramount tasks early. Our platform distributes cryptocurrency rewards instantly to the person who completes a task, immediately after the verification. These rewards are saved in a personal wallet and can be used willingly according to the user's preference. The system guarantees timely and transparent payoffs, eradicating delays and reliance on payroll middlemen. Unlike traditional rewards, payment is work based and reflects the actual effort of freelancer. This method motivates productivity and gives users full control over the earnings.

## II. RELATED WORK

The growth of digital freelancing platforms, block chain applications, and decentralized collaboration tools has resulted in a varied body of research, yet significant gaps remain in how these systems unify trust, automation, and community management. Current freelancing studies illustrate common drawbacks in ongoing platforms, including centralized authority, delayed payments, minimal transparency, poor conflict handling, and confined regional payment methods. Likewise, blockchain focused research usually concentrates on fundamental cryptocurrency transfers, prediction frameworks or simple task tracing, without completely addressing DAO based decision making, freelancer credits management or automatic on-chain reward flows. Building on these findings, our application, Task Bounty Board, presents a combined decentralized task economy that combines blockchain based task logs, IPFS based proof-of-work submissions, instant crypto payments, DAO voting for community-based decisions, and trust less dispute settlement. By combining concepts from freelancing platforms, blockchain payment research, and decentralized administration models, Task Bounty aims to mitigate the limitations detected in prior studies and give away a transparent, trust-ensured, reward-driven ecosystem for global task collaboration.

The author in “A Freelancing Website” displays a centralized freelancing platform that functions job posting, profiles, payments and fundamental coordination between clients and freelancers. The platform functions well but still rely on usual servers, creating gambles like data breaches, confined transparency and single points of failure. In contrast, our Task Bounty Board exhibits a fully decentralized model using Aground smart contracts, IPFS storage, and DAO-based administration. It automates escrow; guarantees trust less task completion and provides skill based task recommendations. Overall, our platform delivers higher security, transparency and reliability than the centralized method described in the paper [1].

The author in “Web App for Freelancing Developers and Designers” illustrates a MERN stack based centralized freelancing platform that links clients with developers and designers by their profiles, projects they posted, ratings given and secure payments. The paper highlights coordinated teamwork but still leans on traditional servers, making it risky to data breaches, single-point failures, and limited automation. In distinct, our Task Bounty Board beats these issues via full decentralization using aground smart contract escrow, IPFS file storage and DAO-based communal voting. Our platform moreover offers skill-based task recommendations, Algo coin payments via Pera Wallet, and a trust less system. Thus, it supports stronger transparency, automation and privacy compared to the system discussed in the paper [2].

The author in “A Study on The Freelancing Remote Job Websites” examines traditional freelancing platforms that depend on centralized servers, bidding systems and human verification for connecting end parties. The paper marks issues like restricted transparency, dependency upon intermediaries, and security risks. Unlike, our Task Bounty Board uses smart-contract escrow, DAO voting, and IPFS storage to eradicate central power and automate trust. With skill-based task recommendations and Pera Wallet integration, our platform brings a complete decentralized, secure and transparent freelancing experience [3].

The author in “Freelancing in the Digital Age: Understanding Fiverr within the Gig Economy” unravels Fiverr as a major gig-economy platform, elucidating how it connects global freelancers with clients through features, verticals, and AI-based matching. This paper highlights disputes like partial earnings, huge platform fees, algorithmic control and increasing risks from generative AI replacing manual freelancers. In comparison, our Task Bounty Board extracts these limitations by presenting decentralized smart contracts, DAO voting, IPFS storage along with skill-based task notifications. This provides a transparent, fair and trust less freelancing ecosystem without platform control or high commissions [4].

The author in “Freelancing Platform” educates how traditional freelance environments enable remote work through bidding systems, matching end parties, job posting, and centralized authorizing of payments and profiles. The paper highlights the benefits of flexibility and online alliance but also shows how such platforms depend on centralized databases, human verification and escrow systems that introduce breaks, risks, and definite transparency. In contrast, our Task Bounty Board eradicates these subjects using aground smart contract escrow, DAO voting, and IPFS-based proof storage. With ability based task notifications and Pera Wallet crypto payments, our platform delivers a more automated, secure and fully decentralized freelancing experience [5].

The author in ”Online Freelancing Website” deconstructs how present day freelancing platforms connect clients and freelancers by facilitating project posting, bidding, communication, and secure payments. The paper tells us the importance of skills, communication, self-organization, and responsibility in nurturing freelancing careers. It also articulates burdens such as competition, frauds, and dispute handling, while extending freelancing as a flexible and skill-enhancing earning model in today’s gig economy [6].

The author in ”Freelancing Platform” tells how modern gig-economy market places like Upwork and Fiverr couple clients and freelancers through regulated project posting, bidding, secure payments, and payment systems. The paper marks

platform dynamics, freelancer and client dealings, income challenges, and the social economic impact on freelancing. It also highlights algorithmic matching, target based escrow systems and the demand for policies reaching fairness, data privacy, worker security in digital task platforms [7].

The author in the "Online Freelance Marketplace Research" inspects how digital freelance ecosystem connects Kenyan freelancers with worldwide clients through online task posting, bidding, and hybrid service delivery. The paper features the swift growth of the gig economy in Kenya, bound by internet accessibility and soaring demand for hybrid work. It also narrates key challenges such as unsatisfactory income, platform fees, struggle and trust issues between clients and freelancers. Additionally, the study shows the importance of secure payment techniques, skill verification, and upgraded platform transparency. Overall, the research gives insights into how online freelance ecosystems can be hardened to support sustainable digital employment [8].

***Table 1: Summary of Related Works on Freelancing Websites.***

| Author(s) | Methodology | Key Findings | Limitations |
|---|---|---|---|
| Pawar et al. [1] | Centralized oriented freelancing platform | Relies on usual servers rather than decentralized system. | Faces Data Breaches, Bias in transactions. |
| Narote et al. [2] | Freelancing site developed using MERN stack | No DAO voting is included and no Wallet integration which supports users worldwide. | Single Point of Failure, Limited Automation. |
| Thabassum [3] | Study on freelancing sites built on centralized architecture and bidding systems | No dispute resolution system and payment method includes PayPal which gives delayed funding at times. | Task categories are specified in prior, it may discourage other excluded categories. |
| Whalley et al. [4] | Platform fees oriented system involved in Fiverr | No IPFS storage, centralized architecture. | Huge platform fees and centralized control. |

## III. METHODOLOGY

The evolution of the Decentralized Task Public Square using PERA Wallet is carried out using a controlled and systematic approach. This system guarantees a transparent, award oriented workflow between clients and freelancers while maximizing blockchain for secure transactions and dispute resolution via DAO voting. The following chapters describe the methodology we applied to each participant in the ecosystem.

### A. Case: Task Poster

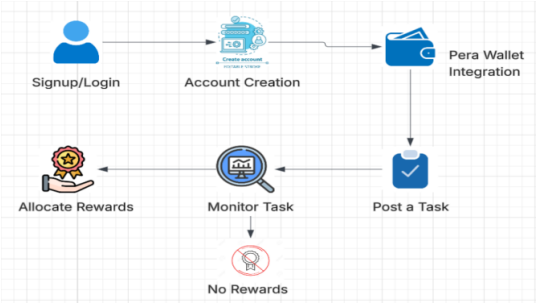



***Figure1: Suggested Operations performed by a Task Poster***

### *B.* User *Onboarding and Wallet Creation*

Task posters start by registering on the interface and finishing their profile setup. Across onboarding, participants are guided to build a PERA Wallet account that acts as their secure blockchain based payment gateway. This pera wallet enables them to forward and receive rewards, ensuring all payments remain transparent, provable and tamper-proof.

### *C.* Task *Posting and Reward Allocation*

Once profile setup is complete, task posters can create and broadcast new tasks on the platform. Each task contains essential details much like task description, awaited deliverables, finishing time and the reward amount. Rewards are sealed

into a smart contract, ensuring that assists are securely held until the freelancer's submission is confirmed. This criterion minimizes fraud and ensures fair remuneration.

### *D. Work Monitoring and Decision Making*

Clients can perpetually watch the progress and status of proof of submit through their profiles. When a freelancer completes and submits their work, the client has the choice of accepting or rejecting it based on perfection and adherence to task constraints. This attestation procedure ensures accountability and ensures task quality within the system.

### *E. Reward Distribution*

Upon considering the submitted work, the smart contract system automatically issues the sealed reward amount of algo's to the freelancer PERA Wallet account. This decentralized payoff eliminates the need for middlemen and guarantees instant and unbiased compensation. The complete process is saved on the blockchain to ensure full transparency and traceability.

### F. Case: Task Seeker

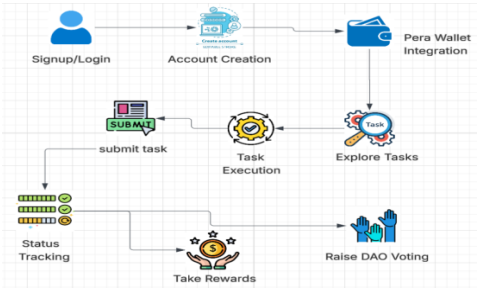



***Figure 2: Suggested Operations performed by a Task Seeker.***

### *G.* Profile Creation and Wallet Setup

Task seekers i.e., freelancers begin their pathway on the interface by registering with verifiable personal details much like name, contact information and professional skills they possess. During this procedure, they are escorted to create their PERA Wallet account that helps them as their secure digital personality and payment details on the blockchain. The wallet empowers them to receive rewards straightly from task posters without any third-party intervention. Robust authentication protocols and hashed storage secure the user information and wallet details remain safe and protected, developing trust within the decentralized ecosystem.

### H. Task Exploration and Execution

After finishing the setup, task seekers gain access to a wide range of available tasks via the "Seek Task" interface. Each task listing displays crucial details such as skill requirements, difficulty level, submission deadlines, and potential reward amounts. Seekers can apply advanced filters or search based on their expertise to find tasks that best align with their capabilities. Once a suitable task is identified, they begin execution using the provided task description and guidelines. This feature promotes skill-based matching and encourages seekers to showcase their talents while earning fair compensation in a transparent system.

### I. Work Submission and Status Tracking

Upon completing the assigned work, task seekers upload their proof of work using platform's submission interface. The system privately forwards the submission to the respective client for verification, ensuring immutability and trackability of all submissions. During this validation phase, freelancers can see the real time progress of their submission, whether it is under review, accepted or denied. The transparent status tracing mechanism reduces ambiguity and provides assurance that their effort is being assessed fairly. Notifications and any alerts keep seekers updated timely, enhancing user consultation and satisfaction.

### J. DAO-Based Dispute Resolution

If a task seeker estimates their work has been unfairly denied or undervalued, they can demand the decision by commencing a DAO (Decentralized Autonomous Organization) voting procedure. In this process, community people and verified users evaluate the evidence and poll votes transparently to reach a communal decision. This blockchain based authority ensures fairness, impartiality and democratic resolution of disputes without relying on rooted moderators. It secures the freelancer's rights parallelly strengthening the integrity and liability of the entire ecosystem through transparent communal participation.

### K. Reward Collection

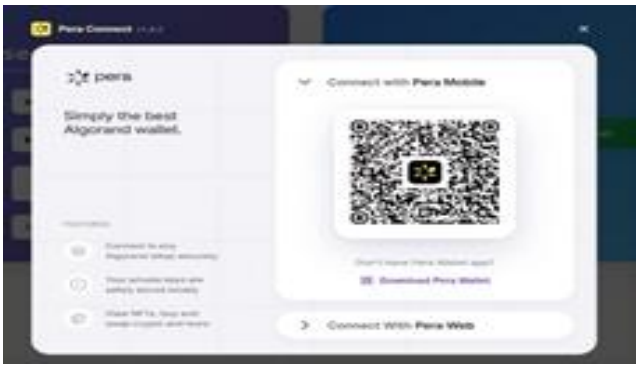
Once work is approved by client or if DAO ruling is in favour of freelancer the sealed amount is automatically transferred through smart contract system to seeker's account. This automated reward eliminates human intervention and ensures instant, tamper proof transactions. The system looks after complete transaction history for transparency, permitting seekers to trace their earnings and hold records easily and safely. By assuring timely and direct payouts, the platform serves user trust, benefits consistent participation and affirms a sustainable, reward based digital economy.

## IV. RESULTS AND DISCUSSION

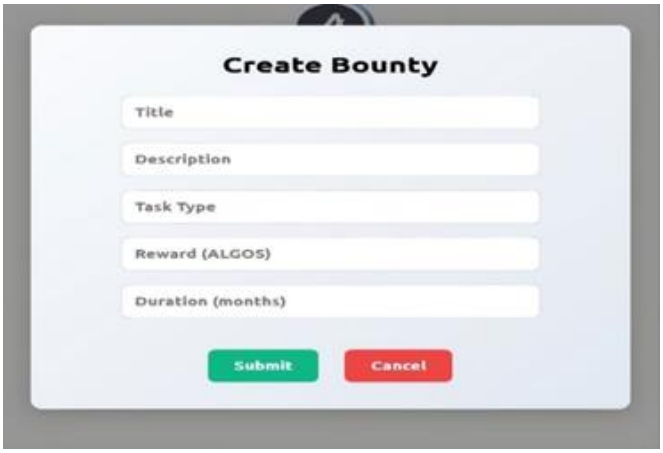
The proposed system Task Bounty Board is developed using different metrics that ensures transparency, automation using blockchain technology and fair transactions. The results observed include variant user interfaces showcasing outputs, functionalities and system overall working.

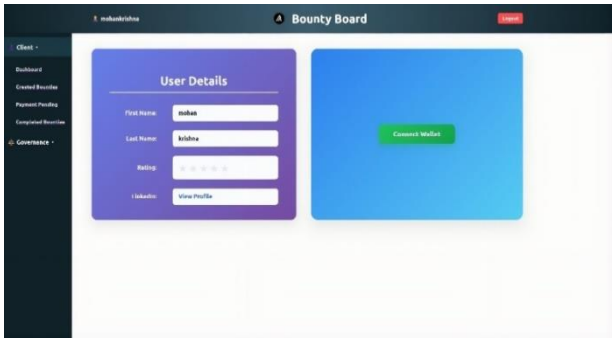
### A. User Registration and Wallet Integration Results

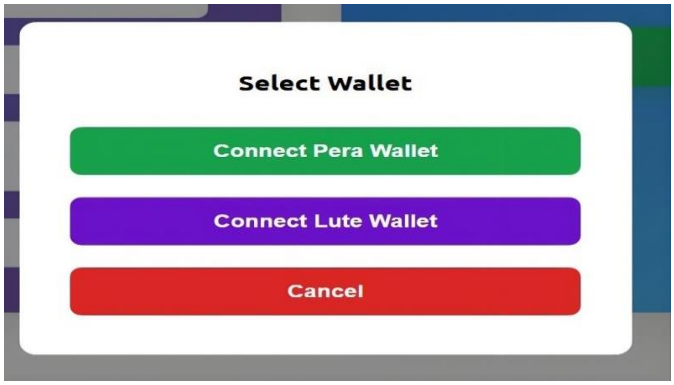
The system got evaluated with multiple users and their performed operations like registration, wallet creation. Registration section successfully allowed users to create their respective accounts with strong authentication, integration with Pera wallet also got enabled seamlessly.










### B. Creation of Task and its Management Results

The task posting feature is analysed by allowing different users to create bounties with allocated rewards. The system stored the details of bounties clearly including description, expiry and amount of algo's and everything go locked in a smart contract escrow.

### C. Task Execution, Submission Results

Freelancers can browse, select desired task and complete within given time period. Filters help users to choose tasks related to their skillsets.

### D. DAO Based Voting Results

The DAO voting is tested in various scenarios, system helped and enabled community-based decision making, where users voted to resolve conflicts and helped to achieve fairness and deleted bias from centralized authorities.

## V. ABLATION STUDY

An ablation study conducted to analyse the working of each major component in the Task Bounty Board system and their impact on overall performance and reliability.

### A. Impact of Smart Contract Escrow

The smart contract escrow method played a crucial role in enabling secure and ethical transactions. When this part got removed, payments require human intervention, increasing the rick of fraud and slow payments.

### B. DAO Voting vs. Centralized Dispute Resolution

To analyse disputes, handling them over time, DAO based voting gives accurate and efficient results when compared to centralized dispute resolution which causes bias and reduces transparency.

### C. Effect of Wallet Integration

Pera Wallet Integration is most important thing for enabling block chain transactions. Without wallet, users cannot receive their rewards directly and system must rely upon traditional payment methods which are time taking and includes disputes at banks and UPI systems.

## VI. CONCLUSION

Alga Bounty revolutionizes the freelance and microtask ecosystem by removing centralized intermediaries and enabling a fully decentralized workflow. By leveraging aground smart contracts, it ensures instant, secure, and feeless payments directly to task performers. The integration of DAO-based voting makes dispute resolution transparent, fair, and community-driven, eliminating biased admin decisions. IPFS storage guarantees tamper-proof and verifiable proof of work submissions, while Pera Wallet integration makes the platform globally accessible without traditional bank accounts. The frontend, built with React.js and Tailwind CSS, delivers an intuitive, responsive, wallet-first experience, and the backend powered by Django and PostgreSQL ensures scalable task management and strong data integrity. Algo Bounty further promotes trust less interactions by automating task posting, claiming, and reward distribution, fostering an open microtask economy that is borderless, transparent, and merit-based. Future enhancements include AI-driven task recommendations, cross-chain interoperability, and advanced reputation layers for verified contributors. By combining blockchain, smart contracts, and DeFi principles, Algo Bounty provides a sustainable, efficient, and fair alternative to traditional task platforms, laying the foundation for the next-generation decentralized gig economy.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