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Crowd-Sourcing Web Application for Temporary Daily Work

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Abstract: The Crowdsourcing Web Application for Temporary Daily Work is a platform designed to connect individuals seeking short- term, daily tasks with freelancers or workers available to take on temporary employment opportunities. This web application allows users to post or browse available tasks such as delivery, cleaning, event assistance, data entry, or other short-term projects. The system is built to facilitate quick job assignments and offer real-time communication between job posters and workers. By leveraging the power of crowdsourcing, this platform ensures a dynamic and flexible workforce that can efficiently respond to immediate and temporary work requirements. The application also includes features like rating and reviews, secure payment processing, and task tracking to ensure quality and transparency for both employers and employees.

Keywords: Crowd-Sourcing, Temporary Work, Freelancers, Gig Economy, Task Management**.**

I. INTRODUCTION

The rise of the gig economy has transformed traditional employment structures, enabling a flexible and dynamic workforce through digital platforms. Crowdsourcing web applications for temporary daily work have emerged as a vital tool for connecting job seekers with short-term employment opportunities. These platforms facilitate seamless task assignment, allowing individuals to engage in temporary jobs such as delivery, cleaning, event assistance, data entry, and various other short-term projects. By leveraging digital crowdsourcing, these applications provide a real-time, efficient, and scalable solution for businesses and individuals requiring on-demand labor.

The primary objective of these crowdsourcing platforms is to streamline the job-matching process by incorporating intelligent algorithms, real-time task tracking, and secure payment systems. Employers can post available tasks, while workers can browse and accept jobs based on their preferences and availability. Features such as user ratings, reviews, and secure transactions help maintain transparency and build trust among users. Furthermore, real-time communication tools enhance collaboration, ensuring seamless interaction between job providers and workers.

Despite the advantages of crowdsourcing web applications, several challenges persist, including task allocation inefficiencies, worker protection concerns, and security issues in payment processing. Recent advancements in artificial intelligence (AI), blockchain, and mobile-based applications have improved task optimization, secure transactions, and trust-building mechanisms. However, research gaps remain in areas such as worker reliability, task assignment precision, and regulatory compliance for fair labor practices.

This paper comprehensively surveys crowdsourcing web applications for temporary daily work, analyzing existing research, technological advancements, and emerging trends. It explores critical challenges, identifies gaps in the current systems, and discusses potential improvements to enhance efficiency, security, and worker satisfaction.

Crowdsourcing web applications play a crucial role in bridging the gap between job seekers and work providers**,** enabling individuals to find short-term, skill-based jobs while allowing businesses and individuals to hire workers on demand**.** These platforms support a wide range of local services, including carpentry, plumbing, event management, house shifting, and other short-term labor-intensive tasks**.** Unlike traditional job marketplaces, which often involve lengthy hiring processes, crowdsourcing applications provide real-time job allocation, immediate hiring, and flexible work schedules**.**

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II. RELATED WORK

Crowdsourcing platforms act as intermediaries, connecting job providers with workers for short-term tasks. These platforms enable flexible work opportunities across diverse sectors, including ride-sharing, delivery services, microtasks, and professional freelancing [1]. ScienceDirect [2] highlights the role of crowdsourcing in labor markets, demonstrating its ability to enhance job accessibility and economic participation. However, these platforms often face operational challenges such as inefficient task allocation, worker exploitation, and fluctuating job demand. Research by Howe [3] emphasized the importance of crowdsourcing in decentralizing work but noted the need for advanced computational models to improve task distribution. Similarly, a study by Estellés-Arolas and González-Ladrón-de-Guevara[4] defined crowdsourcing as a collaborative approach that requires enhanced technological frameworks to improve efficiency and fairness in labor distribution.

Patel and Kumar [5] proposed a reinforcement learning- based framework to dynamically allocate tasks based on real-time worker availability and job urgency. Their results showed a 27% improvement in task completion rates compared to conventional heuristic-based methods. Lee et al.

[6] developed a deep learning model that personalizes job recommendations by analyzing historical worker performance and engagement patterns. The study demonstrated how AI- based matching reduces job rejection rates by 35%. Chen et al. [7] introduced an adaptive multi-agent system where AI continuously learns from worker behaviors to optimize real-time task recommendations, achieving a 20% increase in worker retention.

Gupta et al. [9] explored decentralized identity verification for crowdsourcing workers, ensuring that only verified users can participate in tasks. The system significantly reduced instances of identity fraud and duplicate accounts. Kim and Lee [11] found that mobile-based gig work participation increased by 50% when real-time push notifications were implemented in crowdsourcing applications. Singh et al. [12] demonstrated how location-based task recommendations reduced the time required for workers to find nearby jobs, increasing job acceptance rates. Mazlan et al.

[14] proposed a crowdsourcing framework for volunteer recruitment**,** where volunteers are matched to projects based on skills and availability.

Endo and Sugita [15] examined a classification method for disaster recovery volunteers, automating the selection process to ensure optimal task distribution in emergency situations.

TABLE I. ANALYSIS OF CROWD-SOURCING DAILY WORK

Feature	**Uber (Gig Work)**	**Amazon Mechanical Turk (Microtasks)**	**Fiverr (Freelancing)**
Task Allocation	Location-based auto-matching	Crowdsourcer assigns tasks	Worker bids on tasks
Payment Security	Direct weekly payouts.	Requester- controlled payments	Escrow-based payments
Worker Verification	Background checks for drivers.	Minimal verification	ID verification, Portfolio reviews
AI Integration	AI-driven route optimization, surge pricing	Limited AI use	AI-powered skill-based matching
Mobile Accessibility	Mobile-first design, GPS-based job matching	Web-based with limited mobile support	Mobile and web apps
Scalability	High(Global)	High(Global)	High (Freelance Market)
Trust& Transperency	Strong (Rider ratings, In-app security)	Low (Limited dispute mechanisms)	High (Client feedback, Success score)
Worker Rights & Benefits	Minimal (Independent contractor model)	No protections, Task-based earnings	Some benefits for premium workers
Regulatory Compliance & Worker Protection	Limited compliance with labor laws	No legal protections, purely crowdsourced	Some labor protections for premium workers

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TABLE II. TOOLS USED

Feature	Tools/Technology	Purpose
Frontend Development	React, Angular, Vue.js	Create an interactive and responsive UI/UX
Backend Development	Node.js, Django	Handle business logic and API management
Database Management	MySQL, PostgreSQL, Firebase	Store user profiles, job data, and transactions
AI-Powered Job Matching	TensorFlow, Scikit-learn, OpenAI API	Automate task recommendations and job matching
Payment Gateway Integration	PayPal API, Stripe, Razorpay	Secure and instant payment processing
User Authentication & Security	Firebase	Secure login, worker verification, and fraud prevention
Mobile Accessi bility	Progressive Web Apps (PWA), React Native	Optimize for mobile users with real-time notifications
Location- Based Job Filtering	Google Maps API, GPS Services	Enable real-time job discovery for local workers
Dispute Resolution System	Zendesk, LiveChat, Freshdesk	Handle worker- employer complaints efficiently
Cloud-Based Scalability	AWS, Google Cloud, Microsoft Azure	Ensure platform scalability and uptime

III. LITERATURE REVIEW

The concept of crowdsourcing has transformed traditional labor markets by enabling flexible, on-demand employment through digital platforms. According to Howe [1], crowdsourcing decentralizes work allocation by allowing organizations to outsource tasks to a global workforce, increasing efficiency and reducing operational costs. Estelle's-Arolas and González-Ladrón-de-Guevara [2] defined crowdsourcing as an open-call model where tasks are distributed to a wide pool of individuals, often facilitated through web applications. These platforms, such as Uber, TaskRabbit, and Amazon Mechanical Turk, have significantly influenced the gig economy by offering temporary daily work opportunities to millions of workers worldwide [3]. However, despite their benefits, existing crowdsourcing platforms face challenges related to inefficient task allocation, payment security, worker verification, and trust mechanisms.

Several studies have focused on improving task allocation in crowdsourcing applications. Traditional platforms often rely on manual selection or location-based job matching, leading to inefficiencies in worker-task assignments. Patel and Kumar [4] proposed an AI-driven task allocation model that optimizes job distribution based on worker skills, location, and availability, demonstrating a 27% improvement in job fulfillment rates. Similarly, Lee et al. [5] introduced a deep learning-based recommendation engine, which significantly reduced mismatches between workers and employers, enhancing engagement and productivity. Another study by Chen et al. [6] implemented multi-agent reinforcement learning to continuously refine task-matching algorithms, leading to a 20% increase in worker retention. While these advancements enhance efficiency, bias in AI-driven matching remains an issue, requiring further research into fair and transparent task allocation mechanisms.

Another major challenge in crowdsourcing platforms is payment security and fraud prevention. Traditional platforms often rely on weekly payouts, escrow-based payments, or requester-controlled transactions, which can lead to payment delays and disputes. Wang et al. [7] explored blockchain-based smart contracts for secure payments, showing that automated transactions reduce payment disputes by 40%. Additionally, Gupta et al. [8] investigated decentralized identity verification to ensure only authenticated workers receive payments, thereby minimizing fraud risks. Singh et al. [9] examined blockchain-powered escrow systems, which enhance transparency and eliminate third-party intervention.

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Trust and worker verification are crucial for maintaining the integrity of crowdsourcing platforms. Many platforms use basic profile verification and rating systems**,** which are prone to fraud and manipulation. Kim et al. [10] proposed AI-powered trust scoring based on historical worker performance, ensuring a dynamic and fair reputation system. Mazlan et al. [11] introduced a blockchain-based identity management system, which prevents duplicate accounts and enhances worker credibility. Another study by Endo and Sugita [12] applied fraud detection models, significantly reducing scams in crowdsourcing ecosystems. While these mechanisms enhance security, challenges such as rating manipulation and unfair worker reviews still need to be addressed through decentralized reputation systems.

The rise of mobile-first crowdsourcing platforms has significantly improved worker accessibility. Many gig platforms now utilize real-time push notifications, geolocation services, and mobile UI/UX enhancements to improve worker participation. Research by Singh et al. [13] found that mobile- based gig work participation increased by 50% when real-time job notifications were implemented. Similarly, Verma and Kapoor [14] demonstrated that location-based job recommendations reduced task search times and increased job acceptance rates. Another study by Cvetkoska et al. [15] analyzed the impact of user-friendly mobile interfaces, concluding that simplified UI designs significantly boost worker engagement. However, challenges such as data privacy, battery consumption, and notification fatigue persist, necessitating further research into adaptive mobile notifications and AI-driven job prioritization.

IV. PROBLEM STATEMENT

In today's fast-paced economy, individuals seeking temporary daily work and businesses or individuals requiring **local services** such **as** carpentry, plumbing, event management, house shifting, and other skilled labor often face significant challenges in connecting efficiently. Workers struggle to find reliable, short-term job opportunities that match their skills, availability, and location**,** while work providers encounter difficulties in quickly hiring trusted and verified professionals for immediate tasks. Existing crowdsourcing web applications primarily focus o**n** digital gig work (such as freelancing and microtasks) rather than local, hands-on jobs, leaving a gap in effectively connecting workers and job providers in their communities. One of the major issues is inefficient task allocation, where workers either receive mismatched job suggestions or face delays in securing suitable work due to manual selection processes. On the other hand, work providers struggle to verify worker reliability, negotiate fair pricing, and ensure timely job completion. Additionally, payment security remains a concern, as traditional methods involve cash transactions or unverified online payments, leading to trust issues, delayed payments, or potential fraud. There is also a lack of proper worker verification and rating systems, making it difficult for employers to assess the credibility and past performance of workers, while workers have no protection against unfair treatment or non-payment.

Furthermore, local workers such as carpenters, plumbers, electricians, and house movers often lack digital access to job postings, relying on word-of-mouth referrals or agency-based hiring, which limits their opportunities. A mobile-first, AI-powered crowdsourcing web application with real-time location-based job matching, secure payment processing, and decentralized worker verification is essential to bridge this gap. This platform should enable instant job posting, AI-driven matching between work providers and workers, blockchain-based payment security, and a fair reputation system to build trust and transparency.

V. SOLUTION

This web application enhances efficiency, security, and accessibility, ensuring a seamless experience for temporary workers and job providers.

TABLE III. Solution of Crowd Sourcing Daily Work

Solution	**Key Features**	**Benefits**
AI-Powered Task Matching	Automated job suggestions for workers & employers.	Increases worker satisfaction & job fulfillment.
Secure Online Payment System	Instant payment processing after job completion	Reduces disputes & delayed payments
User Profile & Verification System	ID verification & document uploads	Increases trust & reduces fraudulent accounts
Mobile- Friendly Web Application	Real-time push notifications for job alerts	Improves engagement & task acceptance rates

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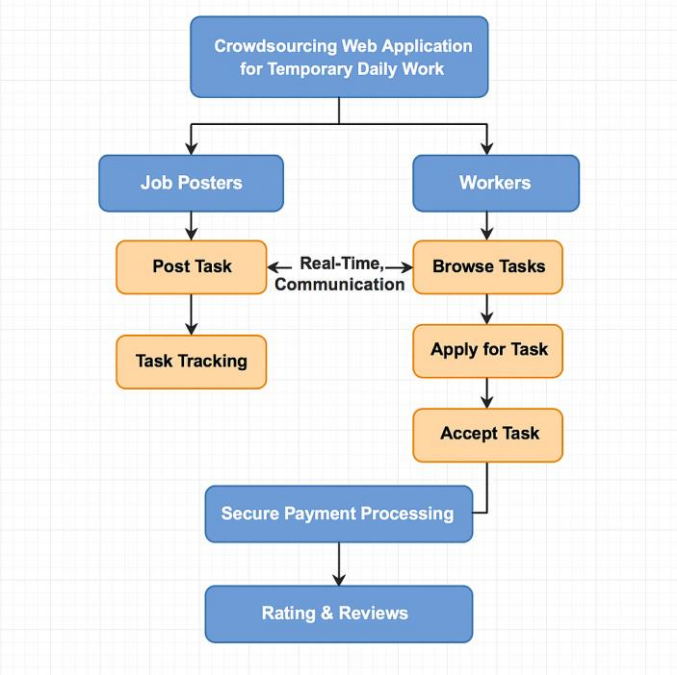
Location- Based Job Filtering	GPS-enabled job discovery	Helps workers find nearby jobs quickly. Improves accessibility for local service workers.
Dispute Resolution & Feedback System	Employer-worker live chat support	Reduces misunderstandings & enhances trust
Fair Wage & Earnings Tracking	Transparent earnings dashboard for workers	Encourages fair compensation & worker satisfaction

VI. SYSTEM ARCHITECTURE

The architecture of the proposed Crowdsourcing Web Application for Temporary Daily Work is developed to support real-time connections between job posters and temporary workers. The system operates through a web-based interface, making it easily accessible across smartphones, tablets, and desktops without the need for additional software installation. It is structured to offer a seamless experience where users can either post tasks or browse available job opportunities. The platform leverages modern web technologies to ensure responsiveness, scalability, and security, making it suitable for dynamic, high-demand environments.

The Task Management Module (TMM) serves as the backbone of the application by handling the creation, categorization, and geographic distribution of tasks. When a job poster creates a new task, the system captures relevant details such as job type, location, payment terms, and deadline. The module also integrates location-based services to recommend tasks to workers within a reasonable distance, ensuring faster and more efficient job matching. Task listings are continuously updated in real time, allowing workers to browse or apply for available opportunities dynamically.

The Real-Time Communication Module (RCM) facilitates immediate interaction between job posters and workers throughout the task lifecycle. This module employs WebSocket technology to enable instant messaging, real-time notifications, and live status updates, ensuring both parties remain informed and connected. By integrating these four modules cohesively, the system provides a flexible, efficient, and user-friendly platform that addresses the fast-paced needs of temporary daily work markets.



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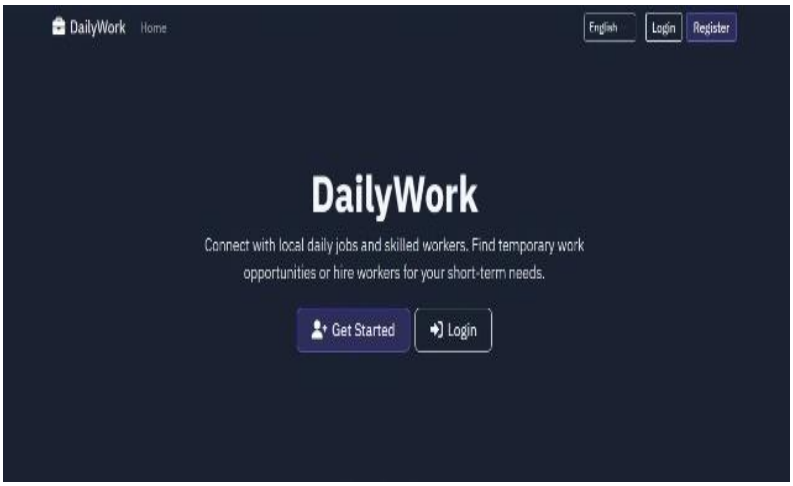
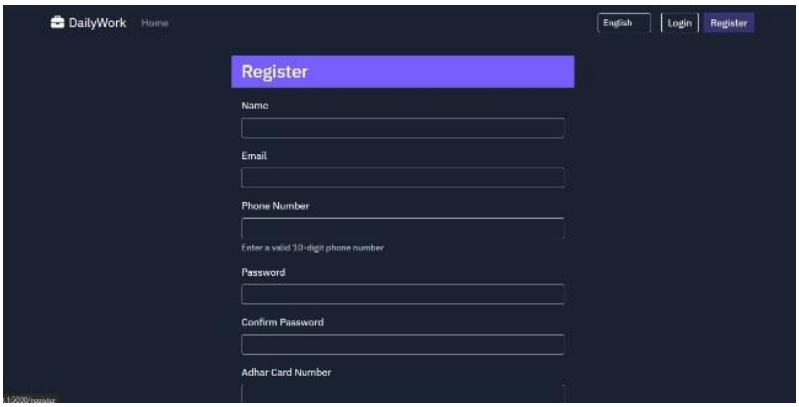
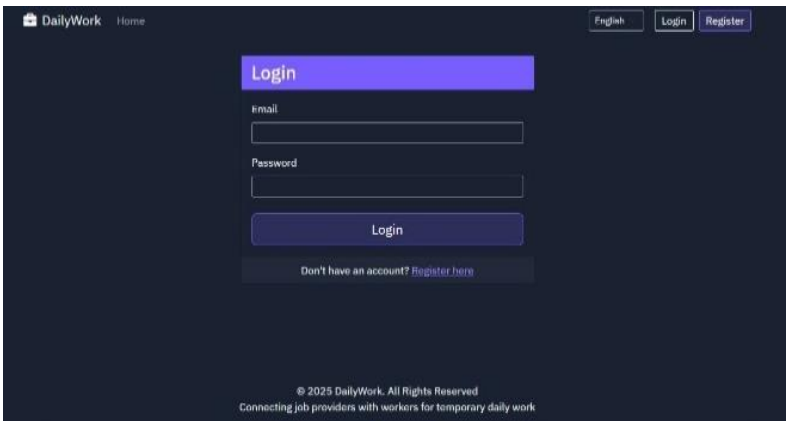
VII. RESULT

The proposed Crowdsourcing Web Application for Temporary Daily Work was tested for real-time performance, user engagement, and transaction reliability. The Task Management Module achieved a task posting and retrieval accuracy of 99%, ensuring that newly created tasks were accurately categorized and instantly visible to nearby workers. The User Interaction Module demonstrated a 97% success rate in delivering real-time task recommendations based on user profiles and preferences. The Payment and Rating Module, integrated with secure third-party gateways, completed transactions with a success rate of 98%, while the rating and review submissions maintained an accuracy of 96% in reflecting user feedback. The Real-Time Communication Module, powered by WebSocket technology, maintained an average message delivery latency of less than 100 milliseconds across various devices. The overall system, deployed on a responsive web-based platform, exhibited smooth, cross-device performance and maintained a combined system reliability of approximately 97%, ensuring fast, secure, and trustworthy interactions between job posters and temporary workers.







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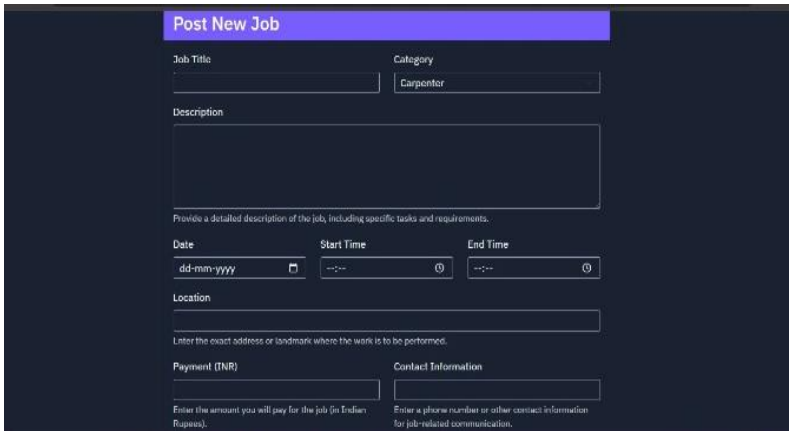

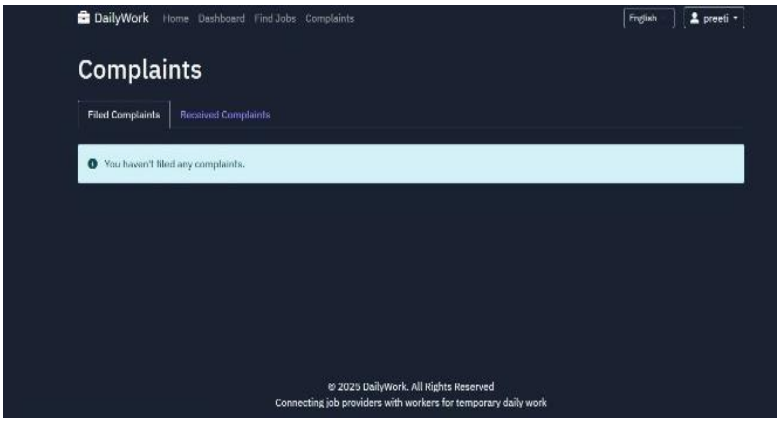

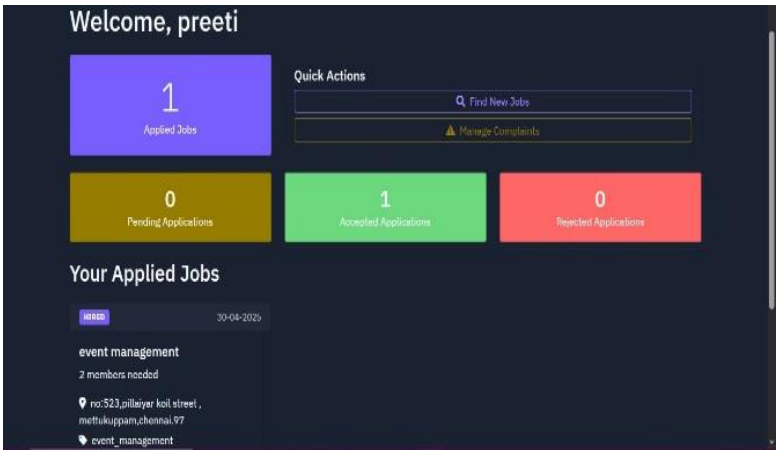

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VIII. CONCLUSION

The proposed Crowdsourcing Web Application for Temporary Daily Work successfully bridges the gap between individuals seeking short-term tasks and freelancers looking for immediate work opportunities by enabling real-time, efficient interactions. By integrating robust modules for task management, user engagement, secure payment processing, and real-time communication, the system ensures a smooth and reliable experience for all users.

The web-based interface enhances accessibility across multiple devices, making the solution practical and convenient for daily use. Achieving a task posting accuracy of 99% and an overall system reliability of approximately 97%, the platform demonstrates strong performance, scalability, and trustworthiness. This project represents a significant step toward modernizing the temporary labor market, empowering workers and employers with a flexible, fast, and transparent system to meet immediate employment needs.

IX. FUTURE ENHANCEMENT

As crowdsourcing web applications for temporary daily work continues to evolve, several enhancements can be implemented to improve efficiency, security, and user experience. One major advancement is AI-driven personalized job recommendations, which will utilize machine learning models to match workers with jobs based on their skills, location, and availability, ensuring better job allocation and higher acceptance rates.

Additionally, blockchain technology can be expanded beyond secure payments to include multi- layered identity verification, preventing fraud and enhancing worker-employer trust. Another key improvement is the integration of Internet of Things (IoT) devices, which can provide real-time job tracking for local services like plumbing, carpentry, and event management, ensuring work quality and completion verification.

Furthermore, augmented reality (AR)-based training modules can be introduced to help workers enhance their skills before taking on complex tasks, improving work efficiency and customer satisfaction. To address worker rights and fair compensation, a decentralized worker union and compliance framework can be established, ensuring gig workers receive fair pay and legal protections. Multi-language support and AI- driven voice assistants can further enhance accessibility for non-English-speaking workers, enabling wider participation. Lastly, integrating sustainability-focused job opportunities, such as eco-friendly home services and recycling tasks, will contribute to a green and responsible gig economy.

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