

Need You: A Personalized Location-Based Micro-Jobs Finder with Secure Real-Time Authentication

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ABSTRACT: NeedYou is a hyperlocal micro-job and services marketplace that bridges the gap between people who need help with everyday tasks & skilled individuals in their vicinity who are looking to earn. The platform is designed around trust, safety, and convenience making it as simple as possible for both sides of the transaction.

KEYWORDS: Micro-Jobs, KYC, hyperlocal, Digital-Wallet, Payment-Gateway, Freelance, Part-Time

I. INTRODUCTION

In today's fast-paced world, the demand for quick, reliable, and affordable help with everyday tasks has never been greater. Whether it's a household chore, a small errand, a repair job, or a delivery — people constantly need assistance, and many skilled individuals around them are willing to provide it. Yet, connecting the two remains a challenge — plagued by distrust, lack of verification, unreliable communication, and unsafe informal arrangements. NeedYou is a digital platform created to solve exactly this problem. NeedYou is a hyperlocal micro-job marketplace that brings together people who need help (Employers) and people who want to earn by offering their skills (Workers) — all within the same neighbourhood or city. The platform enables employers to post small jobs or service requests and instantly connect with verified workers nearby, while workers can discover opportunities, apply, get hired, complete tasks, and receive their earnings — all through a single, seamless app. What sets NeedYou apart from conventional job platforms is its emphasis on trust and safety. Every user on the platform undergoes mandatory KYC (Know Your Customer) verification using government-issued identity documents such as Aadhaar and PAN, ensuring that both parties in every transaction are real, verified individuals. This creates an environment of accountability that is often missing in the informal gig economy. The platform goes beyond just matching workers to jobs. It features real-time live location tracking so employers can monitor worker arrival, an integrated digital wallet for secure earnings and UPI-based withdrawals, structured worker profiles with education and employment history, and dedicated panels for admins and accountants to manage platform operations and financial oversight. NeedYou is built for India — a country with one of the world's largest informal workforces — with the mission to formalize, dignify, and empower local gig work. By giving workers a verified digital identity and a transparent earnings record, and giving employers a safe and structured way to find trusted help, NeedYou aims to bring professionalism, fairness, and efficiency to the everyday economy.

Paper is organized as follows. Section II describes automatic text detection using morphological operations, connected component analysis and set of selection or rejection criteria. The flow diagram represents the step of the algorithm. After detection of text, how text region is filled using an Inpainting technique that is given in Section III. Section IV presents experimental results showing results of images tested. Finally, Section V presents conclusion.

II. LITERATURE SURVEY

1. Introduction to the Survey : The gig economy has reshaped labor markets globally by enabling flexible, platform-mediated work. Sundararajan (2016) describes how digital platforms unlock underutilised human resources through peer-to-peer arrangements. De Stefano (2016) for the ILO notes that while gig platforms provide income flexibility, workers often lack formal employment protections a challenge platforms must address responsibly. Global platforms like TaskRabbit (USA), Airtasker (Australia), and UrbanCompany (India) validate the professional task marketplace model. Ghosh & Choudhury (2020) observed that affordable smartphones and mass internet access in India have accelerated gig work adoption among semi-skilled urban workers the exact audience NeedYou targets.
2. Identity Verification & KYC : Trust between strangers is the core challenge of any marketplace. Pavlou & Fyngenson (2006) established that perceived platform trustworthiness directly impacts adoption. In India, UIDAI's Aadhaar-based e-KYC has become the standard for digital identity verification. Studies by Khera (2019) highlight how Aadhaar has enabled identity confirmation for millions previously unidentifiable, making it ideal for platforms serving the mass market. NeedYou leverages this via the Surepass KYC API for mandatory Aadhaar and PAN verification.
3. Hyperlocal Services & Live Tracking : Saraswathy (2016) defines hyperlocal commerce as GPS-enabled service delivery within a narrow geographic radius. Sorescu et al. (2011) note that hyperlocal platforms succeed when they combine real-time availability with strong trust signals like verified identities. Chen et al. (2017) found through ride-hailing research that live GPS tracking substantially improves user confidence an insight NeedYou extends to the broader micro-job space.
4. Digital Payments & In-App Wallets : UPI processed over 100 billion transactions in India in 2023 (NPCI), transforming wage disbursement for gig workers. Dahlberg et al. (2015) found that in-app wallets reduce transaction friction and increase platform retention. For NeedYou workers, the integrated wallet serves as a digital earnings ledger with a verifiable income history and UPI-based withdrawal capability via Razorpay.
5. Worker Welfare & Research Gap : India's informal economy employs ~90% of its workforce (ILO, 2018). Manyika et al. (2016) (McKinsey) estimated that digital labor platforms can raise worker incomes by 20–30% through better job matching and transparent pricing. Bhandari & Srinivasan (2019) found digitally onboarded gig workers reported higher income stability versus informal networks. Existing literature focuses primarily on ride-hailing or skilled professional platforms. NeedYou fills a gap by offering an open-category micro-job marketplace with government-grade KYC, full financial infrastructure, and real-time coordination — purpose-built for semi-skilled informal workers in India.

III. METHODOLOGY

NeedYou is built on a client-server architecture with a role-based multi-tenant model, serving four distinct user types Worker, Employer, Accountant, and Admin each with their own dashboard and access permissions. A real-time NoSQL database is used as the primary data store, enabling live data updates across all connected clients without manual polling.

The onboarding process follows a sequential, gate-based flow. New users first verify their email and phone, then undergo real-time KYC verification of their Aadhaar and PAN cards through a government-linked API. Only after completing profile details including education, employment, and location is full platform access granted, ensuring every active user is verified and accountable.

Every job follows a defined lifecycle from posting and applications, through hiring and live tracking, to completion and payment. When a worker is hired, the platform auto-generates a bill and activates real-time GPS tracking. The employer monitors the worker's live position on an embedded map view through a push-based data listener, providing continuous visibility with no delay. Upon job completion, earnings are credited directly to the worker's in-app wallet.

The financial system operates as a credit-debit ledger. Employer payments flow in via Razorpay and are credited to the worker's wallet. Withdrawals are initiated by the worker, reviewed by an accountant, and processed to a verified UPI account. All financial operations use atomic batch writes, ensuring no partial state corruption occurs during transactions. Security is enforced at every layer database access rules are scoped strictly by user role, all sensitive API operations run server-side, and credentials are stored exclusively in environment variables. The project was developed iteratively through agile sprints, with end-to-end functional testing, role-specific access testing, and cross-device validation performed at each stage.

IV. EXPERIMENTAL RESULTS

Fig. 1 : Dashboard :

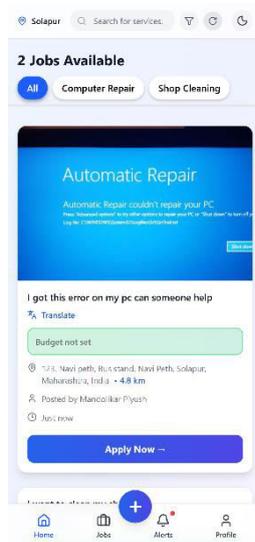
(a) Home : The Dashboard Home screen serves as the central landing page for users upon logging into the NeedYou platform. It provides a comprehensive overview of the platform's current activity, displaying nearby job listings relevant to the user's location, quick-action buttons to either post a job or browse available work. The home screen is designed to give both workers and employers an immediate snapshot of what is happening around them, with a clean, card-based layout that highlights job titles, pay amounts, and proximity. Animated elements and a smooth gradient background create a visually engaging experience while maintaining ease of navigation.

(b) My Jobs : The My Jobs screen presents a consolidated view of all jobs associated with the logged-in user, whether as an employer who has posted them or as a worker who has applied to or been hired for them. Each job is displayed as a card showing the job title, current status (such as Open, In Progress, or Completed), the pay amount, and the date of posting or hiring. This screen allows users to track their job history at a glance, revisit active engagements, and manage their ongoing work without having to navigate away from a central hub. The status tags are color-coded to make it easy to distinguish between different stages of a job's lifecycle.

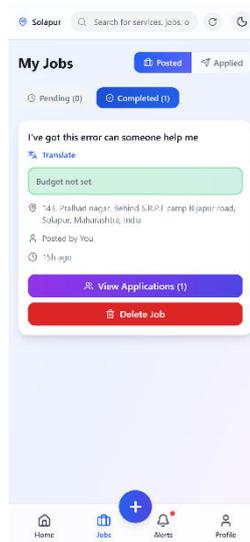
(c) Create Job : The Create Job screen provides employers with a structured form to post a new job or task on the platform. The form captures all essential details including the job title, a detailed description of the task, the category of work, the pay offered, the location where the task needs to be performed, and any additional preferences or requirements. The interface uses intuitive input fields and dropdowns, with address auto-detection available through Google Maps integration. Once submitted, the job becomes immediately visible to nearby workers who match the specified criteria, initiating the hiring process.

(d) Notifications / Alerts : The Notifications screen acts as the user's real-time communication centre within the platform. It displays all system-generated and activity-based alerts, such as new job applications received by an employer, hiring confirmations sent to workers, updates on withdrawal request statuses, KYC verification outcomes, and general platform announcements. Each notification is timestamped and categorised, making it easy for users to stay informed about any developments related to their jobs, wallet, or profile without missing critical updates. Unread notifications are visually distinguished to draw immediate attention.

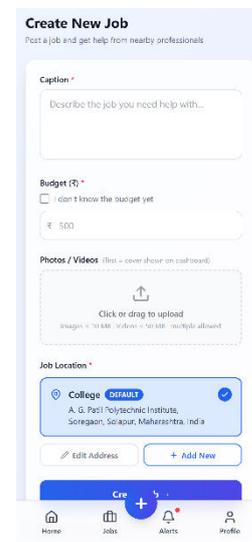
(e) Profile : The Profile screen displays the user's complete identity and professional information as registered on NeedYou. It includes the user's name, profile photo, verified contact details, KYC status badge indicating successful government document verification, educational background, employment history, current location, and address. Workers can use this screen to ensure their profile is complete and presentable to potential employers, as it directly mirrors what employers see when reviewing job applications. It also provides access to settings for updating personal information, managing linked payment details, and viewing the account's verification status.



(a)



(b)



(c)

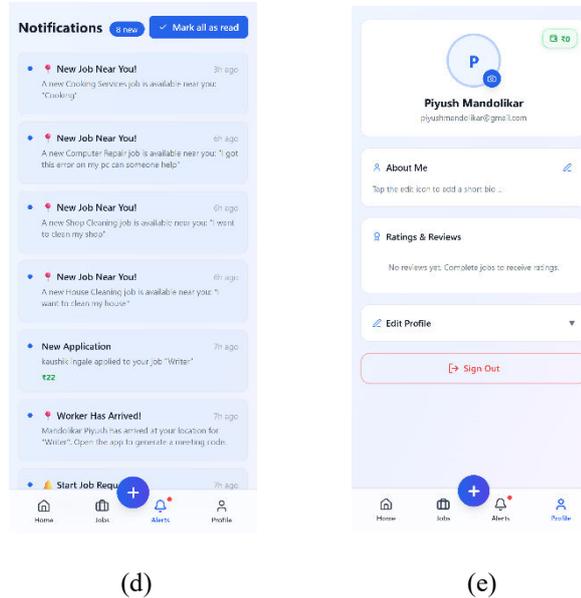


Fig. 2. After Applying Job :

(a) Job Application : The Job Application appears when a worker clicks on an available job listing and decides to apply. It presents a focused overlay displaying the full job details including the task description, offered pay, employer information, and job location alongside the worker's own profile summary that will be sent to the employer upon applying. The worker can review whether their skills and experience align with the job requirements before submitting their application with a single tap. From the employer's side, this same modal is used to view each incoming application, showing the applicant's name, photo, KYC verification badge, education, and employment background, enabling the employer to make an informed hiring decision quickly and confidently.

(b) Chat : The Chat screen provides a direct, real-time messaging channel between the employer and the worker once a job interaction has been initiated. It allows both parties to discuss job specifics, clarify task requirements, negotiate details, or coordinate timing without leaving the platform. The chat interface follows a familiar messaging layout with timestamped message bubbles, making conversations easy to follow. Having an in-platform chat eliminates the need to share personal phone numbers, preserving the privacy of both parties while keeping all communication within a safe and monitored environment.

(c) Start Job : The Start Job screen is the activation point for a hired worker to formally begin a task. Once the employer has confirmed the hire and both parties are ready, the worker triggers the job start from this screen, which transitions the job status from Hired to In Progress within the system. This action simultaneously activates the live location tracking session, notifying the employer that work has officially commenced. The screen also displays a summary of the job agreement — the task details, agreed pay, and employer contact — serving as a final confirmation point before the worker heads out or begins the task.

(d) Live Tracking : The Live Tracking screen gives the employer a real-time map view of the worker's current geographic position from the moment the job is started until it is completed. Powered by the device's GPS and rendered on an embedded Google Maps interface, the worker's location is continuously updated and streamed to the employer's screen with minimal delay. This feature eliminates the uncertainty of not knowing where the worker is or when they will arrive, building a layer of transparency and trust into every job. The employer can monitor the worker's movement in real time, making the platform experience feel connected, professional, and safe.

(e) Bill Creation & Receipt : The Bill Receipt and Creation screen handles the financial documentation of every completed job on the platform. Once a job is marked as complete, the system automatically generates a structured bill that captures all relevant details — the job title, description, worker and employer names, date of service, hours worked if applicable, and the total amount payable. This bill serves as an official record of the transaction for both parties. Employers can review and confirm the bill, while workers receive it as proof of completed work and income earned. The receipt can also be exported as a PDF, giving users a portable, shareable document for their personal financial records or disputes if any arise.

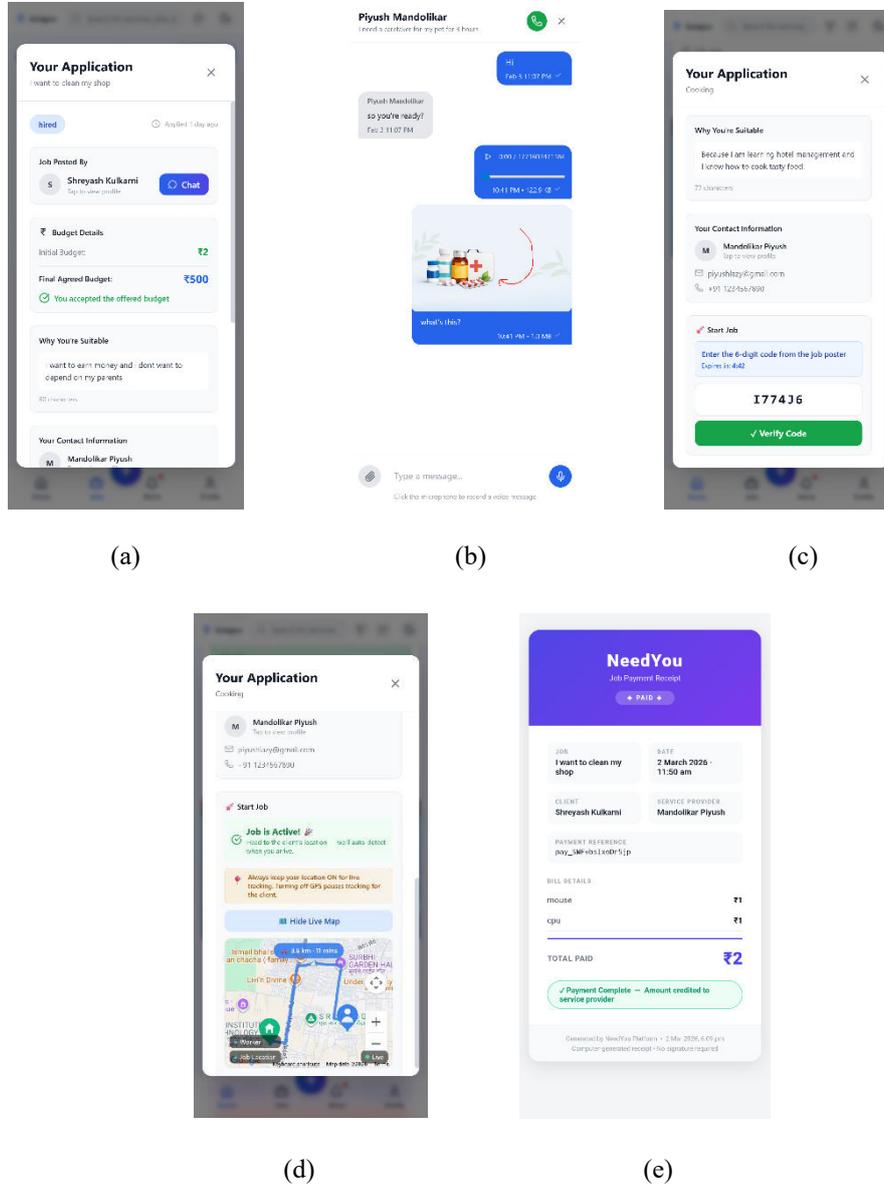


Fig. 3 KYC & Payment :

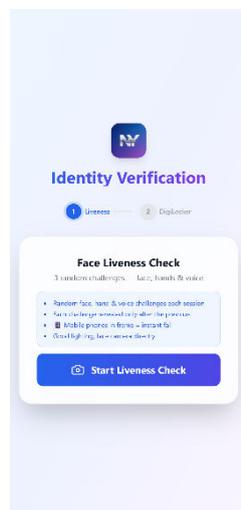
(a) Liveness Detection : The user is prompted to perform a real-time facial scan through their device's front camera, where the system analyzes facial movements and depth to determine that a live human being is present. This step acts as an anti-spoofing measure, significantly raising the bar for identity fraud on the platform. Only after liveness is successfully confirmed does the system proceed to validate the user's Aadhaar and PAN documents, ensuring the entire KYC chain is anchored to a genuine, living individual.

(b) DigiLocker : The DigiLocker integration screen allows users to fetch and submit their government-issued identity documents directly from their official DigiLocker account, which is a Government of India initiative that provides citizens with a secure digital vault for their documents. Instead of manually uploading physical scans or photographs of documents which can be tampered with or unclear users can authenticate with their DigiLocker credentials and grant the platform permission to access verified digital copies of their Aadhaar and PAN. This approach ensures document authenticity at the source level, reduces the risk of forged submissions, and makes the verification process faster and more reliable for both the user and the platform.

(c) Payment : The Payment screen facilitates secure financial transactions between employers and the platform when hiring a worker or paying for a completed job. Built on the Razorpay payment gateway, this screen presents the user with a clean payment summary showing the job name, total amount due, and available payment methods including UPI, debit and credit cards, and net banking. Once the user confirms the payment, Razorpay processes the transaction securely and the platform receives a confirmation webhook, after which the job status is updated and the worker's earnings are reflected accordingly. The entire flow is designed to be quick, trustworthy, and frictionless, with clear success and failure states communicated to the user immediately.

(d) Wallet : The Wallet screen serves as the financial centre for workers on the NeedYou platform, displaying their current wallet balance along with a complete transaction history that includes all income earned from completed jobs as well as all past withdrawal requests and their statuses. Workers can initiate a withdrawal directly from this screen by entering the amount they wish to withdraw and their verified UPI ID, subject to a minimum withdrawal threshold. The wallet history is presented in a chronological list with clear credits and debits, making it easy for workers to track their earnings over time. This screen effectively functions as a personal financial dashboard, giving workers full visibility and control over the money they earn through the platform.

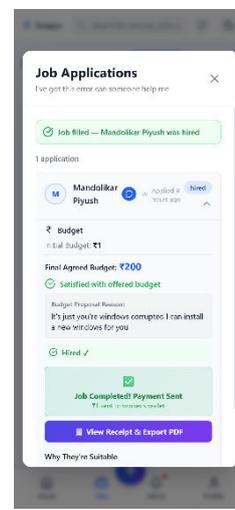
(e) Accountant Dashboard : The Accountant Dashboard is a dedicated management interface for the platform's financial operations team, providing oversight of all worker withdrawal requests across the platform. The dashboard displays a list of pending withdrawal requests, each showing the worker's name, requested amount, linked UPI ID, and submission timestamp. The accountant can review each request, verify the details, and either approve or reject it with a note. Approved requests trigger the payout process while rejected ones notify the worker with a reason. This layer of human oversight ensures that all outgoing financial transactions are reviewed before execution, adding an important control mechanism that protects both the platform and its users from erroneous or suspicious withdrawal activity.



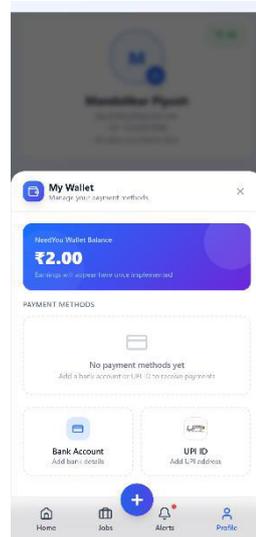
(a)



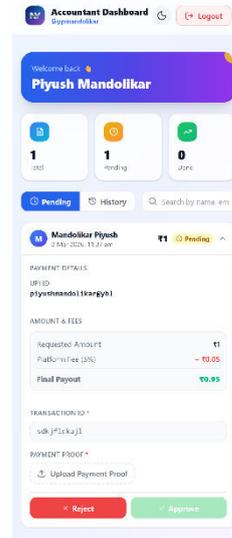
(b)



(c)



(d)



(e)

V. CONCLUSION

NeedYou addresses a critical gap in India's informal gig economy by providing a safe, verified, and structured platform where people can find local help and skilled workers can find dignified employment. With government-grade KYC, real-time job management, live location tracking, and a secure payment ecosystem, the platform brings transparency and accountability to interactions that have traditionally relied on blind trust.

For clients and employers, NeedYou offers a cost-effective alternative to conventional service providers the same work gets done at a significantly lower cost by connecting them directly with local individuals without any middlemen, reducing overhead and making everyday tasks more affordable. For workers particularly students and young individuals the platform opens up a reliable source of part-time income that fits around their existing schedules and commitments. Students can take up micro-jobs in their free time, earn money independently, and build a verified work history without the need for a formal full-time job. This fosters a sense of self-reliance and financial independence among youth who might otherwise depend entirely on family support.

For workers, it establishes a digital identity and verifiable income record. For employers, it guarantees that every person they hire is authenticated and accountable. NeedYou lays a strong foundation for scaling into a comprehensive hyperlocal workforce platform that can meaningfully empower India's everyday gig economy making work more accessible, affordable, and dignified for everyone involved.

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