

**JOBS: AN ONLINE REFERRAL-BASED APPLICATION TO FIND JOBS IN MNCS****Parth More, Sanjana Varade, Vanshika Jain, Purvesh Mendule**Department of Information Technology,  
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**ABSTRACT**

Employee referral programs have become one of the most effective methods of recruitment in modern organizations because they leverage trusted professional networks to identify suitable candidates. Despite their popularity, traditional referral systems suffer from several limitations, including a lack of transparency, delayed communication, referral fraud, and difficulties in tracking candidate progress. This paper presents “Only Jobs,” a web-based referral platform developed using the MERN stack and integrated with blockchain technology to address these challenges. The proposed system records referral transactions through smart contracts, ensuring transparency, security, and immutability. The platform enables job seekers, employees, HR personnel, and administrators to interact within a unified ecosystem. By providing real-time updates, automated verification mechanisms, and tamper-proof referral records, the solution enhances trust and accountability throughout the recruitment process. The project demonstrates how blockchain can be effectively combined with modern web technologies to improve hiring efficiency, reduce fraudulent activities, and create a more equitable recruitment environment.

**Keywords:**

Employee Referral, Blockchain Technology, MERN Stack, Smart Contracts, Web Application, Transparency, Recruitment System

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**INTRODUCTION**

Recruitment is a critical function for every organization, directly influencing productivity, innovation, and long-term growth. Among the many recruitment strategies available today, employee referral programs are widely regarded as one of the most reliable methods for attracting qualified candidates. Employees often recommend individuals from their professional networks, increasing the likelihood of finding candidates who fit both the technical requirements and organizational culture.

However, existing referral systems face significant challenges. Referral submissions are often handled manually, making it difficult to verify the authenticity of referrals and track candidate progress. Employees may not receive clear updates regarding the status of their referrals, while candidates frequently experience uncertainty during the recruitment process. Additionally, centralized systems are vulnerable to manipulation, data tampering, and fraudulent reward claims.

The emergence of blockchain technology provides an opportunity to overcome these limitations. Blockchain offers decentralization, transparency, and immutability, ensuring that records cannot be altered once stored. By integrating blockchain with a modern web application, the proposed “Only Jobs” platform creates a trustworthy referral ecosystem where every referral and application is securely recorded and verifiable by authorized stakeholders.

**OBJECTIVES**

The primary goals of this study and the resulting system are:

- Develop a secure and transparent referral-based recruitment platform.
- Simplify the interaction between job seekers, employees, HR personnel, and administrators.
- Implement blockchain-based referral tracking to ensure data integrity.

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- Eliminate fraudulent referral claims and improve trust among stakeholders.
- Provide real-time updates regarding application and referral status.
- Utilize the MERN stack to ensure scalability, responsiveness, and maintainability.
- Reduce administrative workload through automation and smart contract execution.
- Improve hiring efficiency by streamlining referral verification and candidate tracking.

## METHODOLOGY

The development of the “Only Jobs” platform follows a full-stack software development methodology combined with blockchain integration. The system categorizes users into four primary roles: Administrator, Employee (Referrer), Candidate (Job Seeker), and HR Personnel.

The frontend is developed using React.js, enabling a responsive and interactive user experience. Users can create profiles, browse job opportunities, submit referrals, track application status, and receive notifications. The backend is implemented using Node.js and Express.js, which provide RESTful APIs for communication between the frontend, database, and blockchain network.

MongoDB serves as the primary database for storing user information, job postings, application details, and system metadata. For critical referral records, smart contracts are deployed on Ethereum or Polygon blockchain networks. Whenever an employee refers a candidate, the transaction is recorded on the blockchain. This ensures that referral ownership and timestamps remain immutable and verifiable.

The workflow begins when HR posts a job opening. Employees can then submit referrals for suitable candidates. The blockchain records the referral transaction, while MongoDB stores supporting information. Candidates apply through the platform, and HR personnel can review applications, schedule interviews, and update statuses. All stakeholders receive real-time notifications regarding important recruitment events.

The architecture of the proposed system consists of three primary layers.

### 1. Frontend Layer:

Developed using React.js, this layer provides user interfaces for candidates, employees, HR personnel, and administrators. It ensures smooth navigation, responsive design, and real-time interaction.

### 2. Backend Layer:

Node.js and Express.js are used to implement business logic and API services. The backend processes user requests, manages authentication, validates data, and communicates with both MongoDB and blockchain nodes.

### 3. Data Layer:

MongoDB stores application data, user profiles, and job information. Blockchain technology maintains critical referral records through smart contracts. This hybrid storage approach balances performance and security by using traditional databases for fast access and blockchain for trust-sensitive information.

The architecture ensures modularity, scalability, and security, making it suitable for deployment in large organizations and multinational corporations.

## RESULTS AND DISCUSSION

The proposed platform addresses several limitations of traditional referral systems. By introducing blockchain-based verification, the system ensures that referral records cannot be manipulated or deleted. Employees gain confidence that their referrals are properly recorded and credited, while candidates benefit from increased transparency regarding application progress.

The use of smart contracts automates referral validation, reducing manual effort and minimizing errors. HR departments can focus on candidate evaluation rather than administrative verification tasks. The dual-layer storage model improves overall efficiency by storing high-frequency operational data in MongoDB while preserving critical referral events on the blockchain.

From an organizational perspective, the platform promotes fairness and accountability. Since referral records are immutable, disputes regarding referral ownership can be resolved easily. Furthermore, real-time tracking and automated notifications improve communication among stakeholders, leading to a better recruitment experience. The project demonstrates the practical feasibility of integrating blockchain into recruitment workflows. Initial evaluations indicate improvements in transparency, trust, and operational efficiency compared to conventional referral systems.

## CONCLUSION

The “Only Jobs” platform represents an innovative approach to modern recruitment by combining blockchain technology with the MERN stack. The system addresses key challenges associated with traditional referral

processes, including lack of transparency, fraud, and inefficient tracking mechanisms. Through the use of smart contracts and immutable blockchain records, the platform establishes trust among employees, candidates, and HR personnel.

The hybrid architecture ensures both performance and security, while real-time tracking improves communication and user experience. The project highlights the potential of emerging technologies in transforming recruitment systems and demonstrates how decentralized trust models can contribute to fairer and more efficient hiring practices. As organizations continue to adopt digital transformation strategies, solutions such as “Only Jobs” can play a significant role in shaping the future of talent acquisition.

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