

JobOrbit: A Real-Time, Skill-Focused Platform for Closing the Skill Gap and Strengthening Recruitment Integrity

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Abstract: The modern job market faces challenges such as a growing skill gap, unreliable resume evaluations, and employer fraud on online hiring platforms. Traditional recruitment methods do not effectively measure real technical abilities, while job seekers often find it difficult to identify legitimate opportunities. This paper presents JobOrbit, a real-time, cloud-driven recruitment system built using React TypeScript and Firebase Firestore. The platform features skill assessments based on hackathons, company verification, map-based job discovery, and permanent application records to improve fairness and transparency in the hiring process. A qualitative analysis, backed by user interviews and prototype testing, shows strong user trust, better engagement, and increased recruiter efficiency. Future improvements will include adding professional upskilling courses to address long-term skill gaps.

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I. INTRODUCTION

Recruitment remains a critical function in modern industries, directly impacting organizational performance and growth. However, despite significant technological advancements, the hiring process continues to be inefficient. Traditional methods often rely heavily on resumes, manually curated profiles, and academic credentials, which do not always reflect a candidate's true technical abilities or problem-solving skills. As a result, recruiters struggle to accurately identify qualified candidates, while job seekers are frequently overlooked despite possessing the necessary skills.

In addition to skill misalignment, job seekers face the risk of fraudulent postings and unverified organizations on online hiring platforms. This not only wastes time but also undermines trust in digital recruitment systems, creating barriers for employers and applicants.

JobOrbit was designed to overcome these challenges by introducing a skill-first, trust-centric, and real-time recruitment ecosystem. The platform integrates multiple innovative features, including

Real-time job posting and application tracking allow instant updates for both candidates and recruiters.

Mandatory company verification ensures that all job postings come from authentic and trustworthy organizations.

Hackathon-based skill assessments enable candidates to demonstrate practical abilities rather than relying solely on resume claims.

Map-enabled job discovery provides a visual and location-aware job search experience.

Immutable application snapshots preserve the integrity of candidate profiles and application records.

By combining these elements, JobOrbit not only enhances transparency and fairness but also shifts the hiring focus from credentials to skills. This creates a more efficient, equitable, and user-friendly recruitment process that benefits candidates, recruiters, and organizations.

II. LITERATURE REVIEW

A close look at the existing research shows that today's digital recruitment systems still struggle with several important issues. Research on resume quality, job-matching algorithms, job seeker behavior, and the social pressures surrounding job searches all point to the same conclusion: current platforms leave many gaps unaddressed. Despite technological progress, job seekers and employers continue to face problems that limit the effectiveness and trustworthiness of these systems.

Recent studies show that although digital recruitment platforms have become more advanced, they still face major challenges in ensuring accurate job matching, fairness, and

protection against fraud. For example, Shalaby et al. (2018) developed a graph-based job recommendation system that improves large-scale matching by analyzing relationships between users and job postings. Similarly, Zhao et al. (2021) proposed embedding-based models that better capture the semantic meaning of resumes and job descriptions, leading to more accurate candidate-job alignment. The Resume2Vec (2025) approach further strengthens this idea by transforming resumes into intelligent vector representations, helping applicant tracking systems move beyond simple keyword matching. Despite these technological improvements, concerns about bias, fairness, and transparency remain significant. Mujtaba and Mahapatra (2024) highlight the ethical risks in AI-driven recruitment and stress the importance of building explainable and equitable hiring systems. This need for transparency is also emphasized in *Cracking the AI Recruitment Code* (2025), which argues that trust in person-job fit systems depends on clear and understandable decision-making processes. At the same time, online recruitment fraud continues to threaten the credibility of digital platforms. Vidros et al. (2017) identified common patterns in fraudulent job postings and provided a dataset to support automated detection, while Ullah and Jamjoom (2023) and Goud and Reddy (2025) demonstrated how machine learning techniques can improve fraud detection. More recently, Taneja et al. (2025) introduced Fraud-BERT, a transformer-based model that enhances fraud detection through contextual text analysis. Although these studies offer valuable contributions, they often address job matching, fairness, and fraud prevention separately. Therefore, there is a strong need for an integrated recruitment system that combines intelligent matching, bias-aware design, fraud detection, and transparency to build greater trust and effectiveness in digital hiring platforms.

➤ *Skill Gap and Resume Inaccuracy*

Existing research consistently highlights that resumes do not accurately represent a candidate's true skill set. Many applicants exaggerate or overstate their competencies, leading to discrepancies between their claimed qualifications and actual performance capabilities. This contributes to a widening skill gap, making it increasingly difficult for employers to identify competent candidates.

➤ *Fraudulent Job Postings*

With the widespread adoption of online recruitment platforms, fraudulent job postings have become increasingly common. Studies have reported a significant increase in incidents involving.

- Identity theft
- Data exploitation
- Scam or deceptive job interviews

The absence of strong verification mechanisms in most digital hiring systems leaves job seekers vulnerable to such threats, contributing to decreased trust and reduced credibility of the platform.

➤ *Inefficiency of Traditional Search Filters*

Traditional recruitment platforms rely heavily on text-based keyword searches, which often fail to capture essential spatial and contextual information, such as

- Actual job location and accessibility
- Commute feasibility and travel distance
- Geographic distribution of opportunities

These limitations result in poor job-candidate alignment, causing users to apply for positions that may not be practical or relevant to their location or mobility.

➤ *Performance-Based Assessments in Hiring*

The literature suggests that performance-based evaluations, such as hackathons, coding assessments, and problem-solving challenges, are more accurate indicators of actual ability than resume-based screening. These assessments reduce bias, allow for objective scoring, and provide employers with tangible evidence of a candidate's practical skills and cognitive abilities.

➤ *Real-Time Systems for Hiring Efficiency*

Real-time digital systems have been shown to significantly improve the user experience of online services. In recruitment contexts, real-time interactions enable the following:

- Instant status updates
- Reduced waiting times
- Greater transparency
- Increased engagement and responsiveness

These benefits make real-time architectures particularly suitable for modern hiring platforms that aim to improve both employer efficiency and candidate satisfaction.

➤ *Research Gap*

Although digital recruitment platforms are widespread, they suffer from several fundamental limitations.

- Overreliance on resume-based evaluation.
- Absence of integrated company verification mechanisms:
- Limited or no direct skill assessments were conducted .
- Weak or nonexistent location-based job discovery is another issue .
- Editable user data after job application enable manipulation.

JobOrbit uniquely fills these gaps by combining real-time architecture, verification, skill assessment, map visualization, and immutable records.

III. RESEARCH METHODOLOGY

This study adopted a qualitative research methodology to evaluate the usability, trust, fairness, and efficiency of the JobOrbit system.

➤ *Methodological Table*

Steps for Research and Qualitative Analysis

Table 1 Methodological

Step No.	Research Step	Description
1	Problem Identification	Identification of core industry issues
2	System Design & Architecture	Development of JobOrbit's design using React, Firebase Firestore, Firebase Auth and geolocation technologies.
3	Prototype Implementation	Implementation of core functionalities
4	Prototype Deployment	Deployment of a functional prototype for real-time testing and interaction assessment.
5	Participant Recruitment	Selection of students, job seekers, and recruiters for comprehensive system feedback.
6	Usability Testing	Participants
7	Interviews and Feedback Collection	Conducting semi-structured interviews to gather perceptions
8	Thematic Analysis	User
9	Validation of Insights	The findings were compared with those of the

➤ JobOrbit Architecture and System Overview

Table 2 JobOrbit Architecture and System Overview

Component	Purpose	Contribution
React	Interface and logic	Modular, scalable front-end design
Firebase	Real-time database	Instant updates for posts, applications,
Firebase Auth	Secure authentication	Ensures only verified companies post jobs
Geolocation	Job visualization	Helps locate jobs spatially

• Real-Time Updates

The platform leverages Firestore's onSnapshot capabilities to create a living recruitment environment where information flows without delay. This real-time architecture ensures that job seekers receive live updates on new postings and instant notifications regarding their application status. By synchronizing hackathon results as they happen, the system eliminates the traditional "waiting period," fostering a sense of active engagement and responsiveness that is often missing in standard job portals.

• Immutable Application Records

To maintain the highest standards of recruitment integrity, JobOrbit implements a "snapshot" mechanism for all submitted applications. Once a candidate applies for a position, their profile data is effectively frozen for that specific entry, preventing any subsequent modifications or data manipulation. This design choice is fundamental to ensuring fairness and transparency, as it provides both recruiters and auditors with an unalterable record of the candidate's qualifications at the exact moment of application.

IV. CORE PLATFORM FEATURES

➤ Profile Management

JobOrbit enables candidates to build detailed profiles that go beyond traditional resumes. Users can enter their skills, work experience, education, and projects in a clear and structured format. All profile information is securely stored in Firestore, ensuring that candidates can easily update their backgrounds while maintaining data integrity.

➤ Verified Job Posting

To protect job seekers, JobOrbit requires every company to complete a verification process before posting any openings. This extra step helps ensure that the jobs listed on the platform are genuine, significantly reducing the risk of scams and misleading postings.

➤ Real-Time Application Tracking

One of the most appreciated features among users is the ability to see application updates instantly. As soon as a recruiter reviews an application or changes its status, the candidate is notified in real-time. This reduces the typical uncertainty and long waiting periods associated with job application processes.

➤ Hackathon-Based Skill Assessment

Instead of relying solely on resumes, JobOrbit allows companies to host hackathons or skill challenges connected to job openings. Candidates can participate to demonstrate their real abilities, and recruiters can use these results to better understand each applicant's problem-solving and technical abilities.

➤ Map-Based Job Discovery

JobOrbit includes an interactive map that displays job opportunities based on the location. This visual approach helps candidates quickly identify openings near them, compare commute distances, and make more informed decisions about where to apply for jobs. It transforms job searching into a more intuitive and location-aware process.

➤ *Qualitative Analysis*• *Summary of Findings*

Table 3 Summary of Findings

Theme	User Feedback	Sample Quote	Impact
Trust	Verification increased confidence	“The verification badge gave me confidence that postings are real.”	Higher user retention
Fairness	Hackathons	“I finally felt evaluated on real skills.”	Reduced resume bias
Usability	Real-time updates appreciated	“I know immediately when my application moves forward.”	More engagement
Map-Based Discovery	Easier location-based search	“The map helped me quickly find jobs I can actually reach.”	Better job relevance
Recruiter	Faster candidate	“It cut my screening time in	Improved

• *Thematic Insights*

- ✓ Trust Reinforcement: Verification reduces fraud concerns.
- ✓ Fairness: Skill-based evaluation empowers non-degree candidates.
- ✓ Improved UX: Real-time interactions reduce delays and uncertainty.
- ✓ Recruiter Satisfaction: Hackathons offer immediate skill insights.

holistic ecosystem bridging both skill development and recruitment.

REFERENCES

- [1.] Shalaby, W., AlAila, B., Korayem, M., Pournajaf, L., AlJadda, K., & Quinn, S. (2018). *Help Me Find a Job: A graph-based approach for job recommendation at scale*. *arXiv preprint*.
- [2.] Zhao, J., Wang, J., Sigdel, M., Zhang, B., Hoang, P., Liu, M., & Korayem, M. (2021). *Embedding-based recommender system for job to candidate matching on scale*. *arXiv preprint*.
- [3.] Mujtaba, D. F., & Mahapatra, N. R. (2024). *Fairness in AI-driven recruitment: Challenges, metrics, methods, and future directions*. *arXiv preprint*.
- [4.] Taneja, K., Vashishtha, J., & Ratnoo, S. (2025). *Fraud-BERT: Transformer based context-aware online recruitment fraud detection*. *Discover Computing*, 28, 9.
- [5.] Goud, T. N., & Reddy, N. R. (2025). *A machine learning approach for detecting fraudulent job postings in online recruitment platforms*. *Journal of Sensors, IoT & Health Sciences*, 3(3), 14–28.
- [6.] Ullah, Z., & Jamjoom, M. (2023). *A smart secured framework for detecting and averting online recruitment fraud using ensemble machine learning techniques*. *PeerJ Computer Science*, 9, e1234.
- [7.] Vidros, S., Kolias, C., Kambourakis, G., & Akoglu, L. (2017). *Automatic detection of online recruitment frauds: Characteristics, methods, and a public dataset*. *Future Internet*, 9(1), 6.
- [8.] *Cracking the AI recruitment code: Striving for transparency in finding the right person-job fit*. (2025). *Information & Management*, 62, 104156.
- [9.] *Resume2Vec: Transforming applicant tracking systems with intelligent resume embeddings for precise candidate matching*. (2025). *MDPI Electronics*, 14(4), 794.

V. FUTURE SCOPE➤ *Advanced Hackathon Modules*

Planned improvements include multistage assessments, automated scoring, and domain-specific competitions.

➤ *Integrated Professional Upskilling Courses*

JobOrbit aims to incorporate skill-building courses powered by AI-driven recommendations.

➤ *Enhanced Map Analytics*

Future mapping capabilities include commute time, heat maps, and region-wise demand analysis.

➤ *Blockchain-Based Verification*

A decentralized verification model may enhance security and eliminate fraudulent posts.

VI. CONCLUSION

JobOrbit directly addresses the long-standing issues in modern recruitment, including skill misrepresentation, fraudulent postings, and inefficient search mechanisms. Through real-time updates, company verification, hackathon assessments, map-based discovery, and immutable application records, the platform establishes a transparent and skill-driven hiring ecosystem.

The qualitative findings confirmed strong user trust, fairness, and usability. With future expansion into professional course integration and advanced verification frameworks, JobOrbit has the potential to evolve into a fully