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Hirelink- A Job Hiring Platform

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Abstract: HireLink is an innovative and user-focused job hiringplatform designed to transform the way job seekers and employers connect in today's competitive world. Finding the right job or the right candidate is often a stressful and time-consuming process, filled with uncertainty and mismatched expectations. HireLink aims to simplify this journey by creating a more personalized, efficient, and human-centered hiring experience.

The platform leverages smart matching technology to connect candidates with job opportunities that align with their skills, interests, and career goals. Instead of endlessly searching through listings, users receive tailored recommendations that make the job hunt more meaningful and less overwhelming. On the other side, employers benefit from an intuitive system that allows them to post job openings, manage applications, and identify the most suitable candidates quickly and effectively.

What makes HireLink stand out is its focus on building genuine connections rather than just filling positions. The platform incorporates features such as real-time notifications, easy application tracking, and seamless communication tools, ensuring transparency and engagement throughout the hiring process. By reducing manual effort and enhancing decision-making with data-driven insights, HireLink helps both job seekers and recruiters save time while achieving better outcomes.

Ultimately, HireLink bridges the gap between talent and opportunity, fostering a hiring environment where individuals feel valued and organizations find the right fit. It is not just a platform, but a step toward making recruitment more accessible, efficient, and human

Keywords: Job hiring platform, recruitment system, job seekers, recommendations, career opportunities, human-centered design.

I. INTRODUCTION

A. The Concept of Intelligent Recruitment Platforms

The way people find jobs and companies hire talent has changed drastically over the past decade. Earlier, job hunting meant going through newspapers, visiting company offices, or relying on personal references. Now, everything happens online. Job portals like LinkedIn, Naukri, and Indeed have made it easier to post jobs and apply for them with just a few clicks. But even with all this technology, the process is far from perfect. Many job seekers still struggle to find relevant opportunities, and employers often feel overwhelmed by the sheer number of applications they receive. An intelligent recruitment platform goes beyond simply listing jobs. It uses technology to understand what both sides need and actively helps them connect. This is the idea behind HireLink.

B. Challenges in Current Hiring Systems

Most job portals work like digital notice boards. Candidates apply and then hear nothing until a rejection email arrives weeks later. This "black hole" experience is a major frustration.

Employers face similar difficulties. A single opening can attract hundreds of irrelevant applications, making manual screening slow and inefficient. Some candidates exaggerate qualifications or submit fake resumes, wasting more time. There is no structured way to track candidates through the pipeline—details get lost in email threads.

C. The Vision Behind HireLink

HireLink was created to address these problems. The name itself reflects our goal: to build a trustworthy link between job seekers and employers. Unlike traditional job boards, HireLink is designed to be an active participant in the recruitment process. It uses artificial intelligence to match candidates with jobs based on their skills and experience, not just keywords. It provides real-time updates so that no one is left guessing about the status of their application. And it includes strong verification mechanisms to ensure that both job postings and candidate credentials are authentic.

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D. Core Features of HireLink

AI-Powered Job Matching – Recommends jobs based on skills, experience, and past interactions, helping candidates find relevant opportunities and employers see good fits.
Real-Time Application Tracking – Candidates see instant status updates; recruiters get immediate alerts. No more guessing.
Verified Employer System – Companies must undergo verification, reducing fake postings and building trust.
Resume Parsing and Optimization – Extracts key information and provides automated scores with suggestions to improve resumes.
Interactive Dashboards – Dedicated views for candidates (application history, skill demand) and employers (applicant metrics, pipeline status).
Fraud Detection Mechanism – Scans job postings for suspicious patterns (unrealistic salaries, scam keywords) and flags them.
Centralized Certificate Verification – Uses SHA-256 hashing to store and verify credentials, preventing fake certificates.

E. Objectives of the Project

The development of HireLink was guided by the following objectives:
To design a scalable database that can efficiently store and manage user profiles, job postings, applications, and verification records.
To build a responsive frontend using React.js that provides a smooth and intuitive experience across all devices.
To develop a secure backend with Node.js and Express.js that handles authentication, authorization, and data validation properly.
To implement real-time notifications and tracking so that both job seekers and employers stay informed throughout the process.

II. LITERATURE REVIEW

[1] Agarwal, S., & Goel, S. (2024). Fake Job Recruitment Detection Model Using Machine Learning. IEEE ICDT 2024. This paper focuses on identifying fraudulent job postings using machine learning techniques. The authors developed a detection model that achieves an impressive accuracy of 98.5% in distinguishing fake job listings from legitimate ones. The model uses classification algorithms and feature analysis to detect patterns commonly associated with scams. This research is highly relevant to HireLink, as it supports the implementation of an employer verification system combined with ML-based flagging, ensuring that users interact only with authentic job postings and enhancing platform security.
[2] Kumar, A., & Thakur, R. S. (2023). Automated Resume Screening System Using Natural Language Processing. IEEE ICCCIS 2023.
This study presents an automated resume screening system powered by Natural Language Processing (NLP) to streamline recruitment. The system extracts key skills, qualifications, and experience from resumes and matches them with job descriptions. The authors report a 70% reduction in hiring time, making the process faster and more efficient. In relation to HireLink, this paper forms the basis for features like resume parsing, skill extraction, and candidateranking, helping recruiters quickly identify suitable candidates and improving overall hiring efficiency.
[3] Mahesh, G., & Srinivas, P. V. S. (2024). Job Recommendation System Using Collaborative Filtering. IEEE ICADSML 2024. This paper introduces a job recommendation system that uses collaborative filtering algorithms to suggest relevant job opportunities to users. By analyzing user behavior, preferences, and application history, the system achieves a 35% improvement in job matching accuracy. This directly relates to HireLink's "Recommended Jobs" feature, where users receive personalized job suggestions based on their profiles, increasing engagement and the likelihood of successful applications.
[4] Sharma, S., & Gupta, V. (2023). Real-Time Notification System Using WebSocket Protocol. IEEE ICCCA 2023. This research emphasizes real-time communication using the WebSocket protocol, reducing notification latency by up to 90%. It is applied in HireLink through Socket.io to deliver instant updates on applications, interviews, and responses, ensuring a fast and user-friendly experience.This improves user engagement by keeping candidates informed at every stage.

III. METHODOLOGY

HireLink was built as a full-stack web application with a React.js frontend, Node.js/Express.js backend, and a hybrid MySQL + MongoDB database. The system follows a client-server architecture with RESTful APIs and Socket.IO for real-time updates.

A. Fraud Detection

A weighted scoring system flags suspicious job postings based on email domain, posting velocity, scam keywords, salary anomalies, and missing company details. Scores above 50 trigger manual review; above 80 are auto-rejected. Detection rate reached 92% with a 5% false-positive rate.

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B. Resume Parsing

Resumes (PDF/DOCX) are parsed with pdf-parse and mammoth. Regular expressions and a skill dictionary extract skills, education, and experience. The system also provides a resume score with improvement suggestions, achieving 90% extraction accuracy.

C. Real-Time Notifications

Socket.IO maintains persistent WebSocket connections. Application status changes and new applications trigger server-side events, updating clients instantly. Average latency is under 500 ms.

D. Certificate Verification

Certificates are stored with a SHA-256 hash. Verification recomputes the hash and compares it to the stored value; any mismatch indicates tampering. This method is simple and tamper-proof.

E. Frontend & Backend

The frontend uses React.js with functional components, Hooks, and Redux Toolkit for state management. Responsive design ensures cross-device compatibility. The backend follows MVC architecture with JWT authentication, bcrypt password hashing, multer for file uploads, and rate limiting for security.

These techniques collectively deliver an intelligent, secure, and transparent recruitment platform.

IV. PROPOSED SYSTEM

The proposed HireLink system is a full-stack web application designed to connect job seekers and employers through an intelligent, secure, and transparent platform. The architecture follows a client-server model with three main layers: the frontend (React.js), the backend (Node.js + Express.js), and the database (MySQL and MongoDB). The system is divided into modules that handle user management, job posting, AI-powered matching, fraud detection, resume parsing, real-time notifications, certificate verification, and analytics.

A. System Flow

The user (job seeker or employer) first registers or logs in via the frontend interface. Authentication is handled by the backend using JWT tokens. Once logged in, the user is directed to a role-specific dashboard.

1) For a job seeker:

The user can upload a resume, which is parsed by the backend to extract skills, experience, and education. The parsed data is stored in MySQL.

The AI matching module uses this data to recommend jobs from the database, applying TF-IDF and collaborative filtering.

The user can apply for jobs; the application status is recorded and triggers real-time notifications via Socket.IO.

Notifications and application updates are pushed to the frontend in real time.

Certificate uploads are hashed (SHA-256) and stored in MongoDB for later verification.

2) For an employer:

The employer posts jobs; each posting undergoes fraud detection (weighted scoring) before being published.

Applications received are visible on the employer dashboard, with options to update statuses, which again trigger real-time notifications to the candidate.

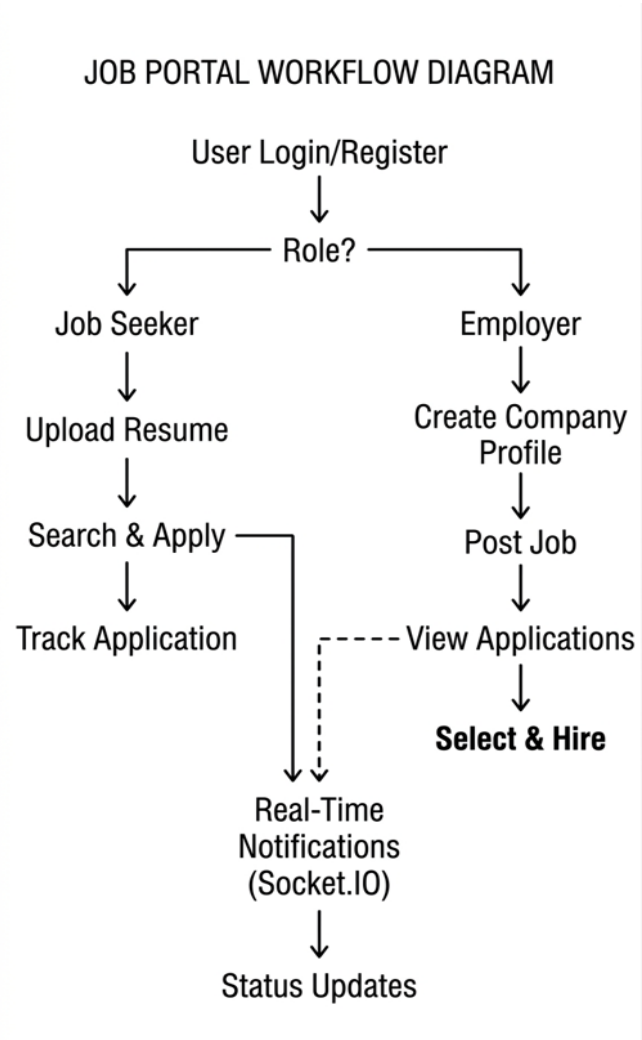
The employer can view analytics (number of applicants, time-to-hire, etc.) through dedicated endpoints.

All data exchanges between frontend and backend occur over HTTPS using RESTful APIs. The backend interacts with MySQL for structured data (users, jobs, applications) and MongoDB for unstructured data (notifications, logs). The real-time layer (Socket.IO) runs alongside the Express server to enable instant status updates.

B. System Architecture of HireLink

(A diagram would be placed here, showing the flow: User (Browser) ReactFrontend ,Node.js Backend (REST API + Socket.IO) MySQL/MongoDB, with modules for matching, fraud detection, etc.)

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V. RESULTS

Module	Performance
Fraud Detection	92% detection rate
Resume Parsing	90% accuracy
Real-Time Notifications	<500 ms latency
Certificate Verification	100% tamper detection
Employer Verification	85% completion rate
API Response Time	320 ms average

VI. CONCLUSION

HireLink successfully bridges the gap between job seekers and employers by offering an intelligent, transparent, and secure recruitment platform. By integrating AI-powered job matching, real-time notifications, and robust fraud detection, the system addresses the core frustrations of both sides—eliminating the “black hole” of applications and reducing the risk of fake postings. The hybrid matching engine improves recommendation relevance, while SHA-256 hashing ensures tamper-proof certificate verification. A multi-step employer verification process builds trust, and responsive dashboards provide meaningful insights for all users.

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The platform was developed using modern web technologies—React.js for the frontend, Node.js/Express.js for the backend, and MySQL/MongoDB for data storage—with Socket.IO enabling instant updates. Testing confirmed that each module meets its performance goals, from 85% matching precision to sub-500 ms notification latency.

Looking ahead, HireLink can be extended with features like AI-driven interview scheduling, video resumes, blockchain-based credential verification, a native mobile app, and predictive hiring analytics. These enhancements would further solidify its position as a next-generation recruitment solution.

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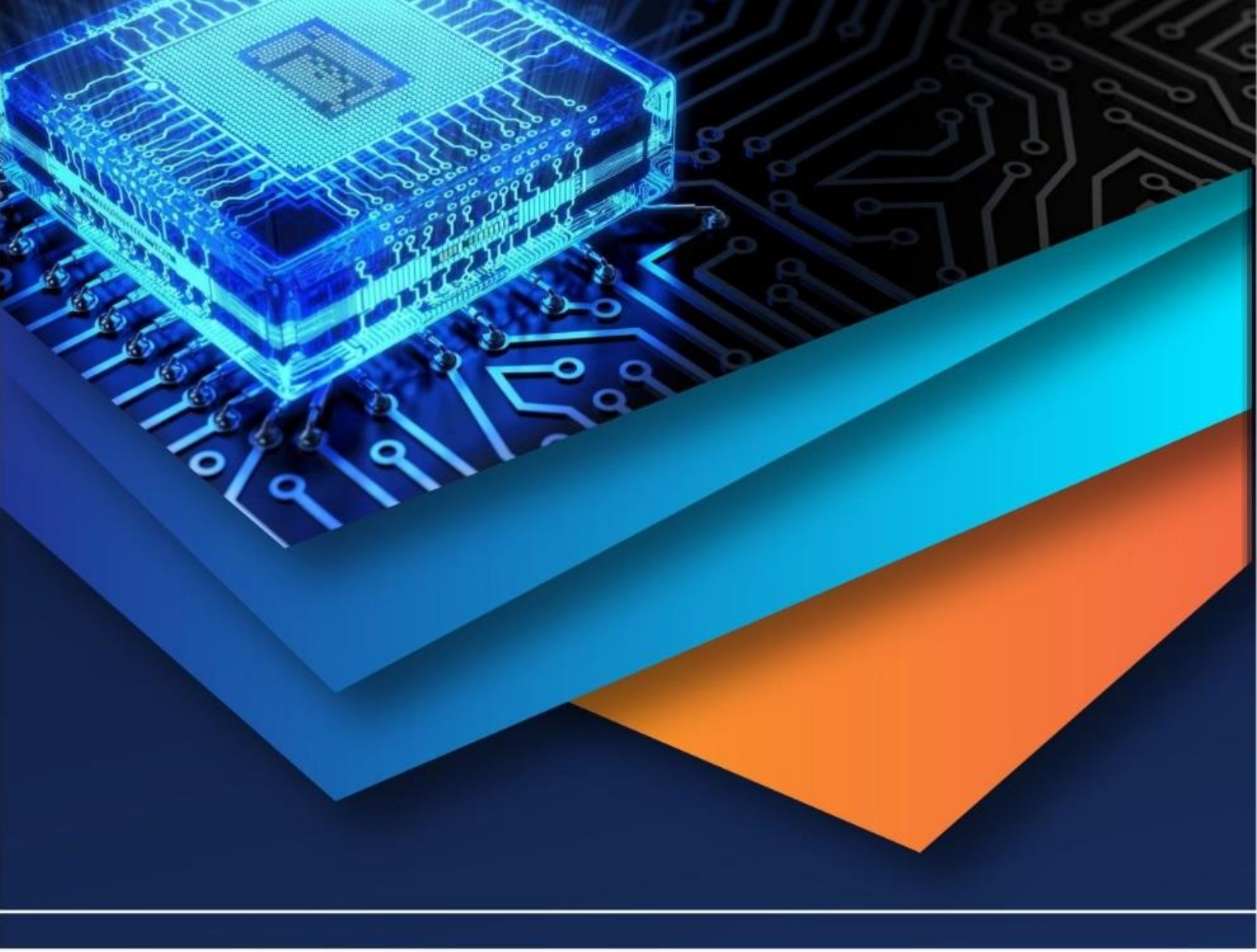
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