



Cloud Based Job Matching and Recruitment Platform with EC2

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ABSTRACT

The rapid growth of online recruitment platforms has transformed how employers and job seekers interact. However, traditional systems often face challenges related to scalability, performance, and intelligent job matching. This project proposes a Cloud Based Job Matching and Recruitment Platform deployed on Amazon EC2 to address these limitations. The system leverages cloud computing to provide high availability, flexibility, and efficient resource management. Job seekers can create profiles, upload resumes, and search for relevant job opportunities, while recruiters can post job openings and shortlist candidates. Intelligent matching algorithms analyse skills, experience, and job requirements to recommend suitable candidates automatically. Amazon EC2 enables scalable compute resources to

handle high user traffic and real-time processing. Secure authentication and role-based access ensure data privacy. The platform improves recruitment efficiency, reduces hiring time, and enhances user experience. By integrating cloud infrastructure with data-driven matching, the proposed system offers a reliable and cost-effective recruitment solution. This project demonstrates how cloud services can modernize recruitment processes and support growing organizational needs.

KEY WORDS

Cloud Computing, Job Matching, Recruitment Platform, Amazon EC2, Resume Analysis

INTRODUCTION

Recruitment is a critical process for organizations seeking skilled professionals in competitive markets. With the rise of

digital transformation, online recruitment platforms have become essential tools for both employers and job seekers. However, many existing systems struggle with scalability, slow response times, and inefficient matching techniques. Cloud computing offers a powerful solution by providing on-demand resources and global accessibility. Amazon EC2 allows applications to scale dynamically based on user demand. A cloud-based recruitment platform ensures uninterrupted availability and faster processing. Intelligent job matching helps reduce manual screening efforts. Job seekers benefit from personalized job recommendations, while recruiters gain access to filtered candidate profiles. The integration of cloud infrastructure enhances system reliability and performance. This project focuses on designing and implementing a cloud-based job matching platform using EC2. The proposed system aims to streamline recruitment workflows and improve hiring accuracy. It supports secure data storage, efficient processing, and user-friendly interfaces. Overall, the system modernizes recruitment through cloud and automation technologies.

LITERATURE SURVEY

Several studies have explored online recruitment systems and job portals. Traditional web-based platforms primarily

rely on keyword matching, which often produces irrelevant results. Research on cloud-based applications highlights improved scalability and fault tolerance. Some studies demonstrate the use of machine learning for resume classification and job recommendation. Cloud deployment models such as IaaS and SaaS have proven effective for high-traffic applications. Amazon EC2 is widely used for hosting scalable web applications. Previous research emphasizes the importance of data security in recruitment systems. Resume parsing techniques using NLP have gained attention. Load balancing and auto-scaling are key benefits discussed in cloud literature. However, many existing studies lack real-time implementation details. Few systems fully integrate intelligent matching with cloud infrastructure. Performance optimization using EC2 instances remains an active research area. Literature also highlights cost efficiency as a major advantage of cloud solutions. These studies form the foundation for the proposed system.

RELATED WORK

Various job portals such as LinkedIn and Indeed provide digital recruitment services. These platforms use recommendation systems but rely heavily on proprietary algorithms. Academic projects have implemented resume filtering using basic

machine learning models. Some cloud-based systems focus only on data storage rather than computation scalability. Existing research demonstrates resume parsing using NLP and rule-based methods. A few works use cloud servers for hosting job portals without dynamic scaling. Recruitment chatbots have also been explored for candidate interaction. However, integration of EC2 auto-scaling with job matching is limited. Many systems lack role-based dashboards for recruiters and administrators. Data privacy and secure authentication are often insufficiently addressed. Most related work highlights the need for smarter matching algorithms. The proposed system improves upon these by combining EC2 scalability and intelligent matching.

EXISTING SYSTEM

The existing recruitment systems are mostly centralized web applications. They often operate on fixed servers with limited scalability. Keyword-based search is the primary matching technique used. Manual resume screening consumes significant time and effort. Performance degrades during high user traffic. Many systems lack intelligent recommendations for job seekers. Recruiters must manually filter large volumes of resumes. Data storage and processing are not optimized. Security mechanisms are basic and vulnerable.

Existing systems struggle to handle real-time updates efficiently. Infrastructure costs are high due to underutilized resources. System downtime affects user trust. Customization options are limited. These limitations reduce overall recruitment efficiency.

PROPOSED SYSTEM

The proposed system is a cloud-based job matching and recruitment platform deployed on Amazon EC2. It provides dynamic scalability to handle varying user loads. Intelligent matching algorithms analyse resumes and job descriptions. Job seekers receive personalized job recommendations. Recruiters can efficiently shortlist suitable candidates. The system supports role-based access for users, recruiters, and admins. Secure authentication ensures data privacy. EC2 enables high availability and fault tolerance. Auto-scaling optimizes resource utilization. The platform offers dashboards for monitoring recruitment activities. Resume data is processed efficiently in the cloud. The proposed system reduces hiring time and operational cost. It improves accuracy in job matching. Overall performance and reliability are significantly enhanced.

SYSTEM ARCHITECTURE

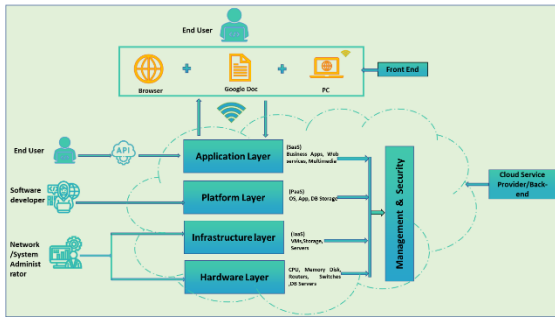


Fig 1: System Architecture

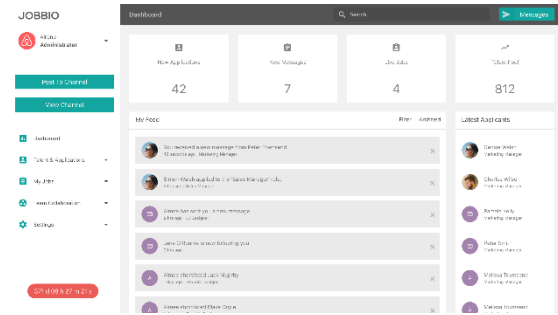


Fig 2: Home Page

METHODOLOGY DESCRIPTION

The system is developed using a modular architecture. User interfaces are designed for job seekers and recruiters. Amazon EC2 hosts the application server. A database stores user profiles, resumes, and job postings. Resume parsing extracts skills and experience. Matching algorithms compare candidate profiles with job requirements. EC2 auto-scaling manages workload fluctuations. Secure login and role-based access are implemented. APIs handle communication between modules. Performance is monitored continuously. Load balancing ensures uninterrupted service. Data backup mechanisms ensure reliability. Testing is conducted for functionality and performance. Deployment is done on cloud infrastructure. The methodology ensures scalability, security, and efficiency.

RESULTS AND DISCUSSION

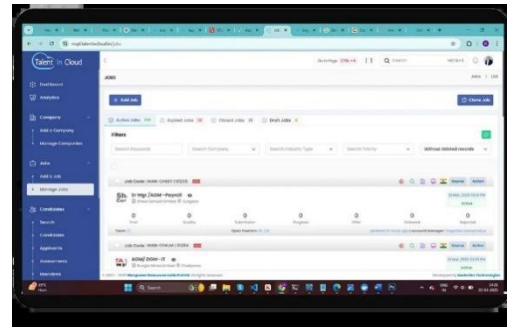


Fig 3: Job Seeker Page



Fig 4: Recruiter Page

CONCLUSION

The Cloud Based Job Matching and Recruitment Platform with EC2 provides an efficient solution to modern recruitment challenges. Cloud infrastructure ensures scalability and high availability. Intelligent job matching improves hiring accuracy. The system benefits both job seekers and recruiters. Automated processing reduces manual effort. Secure cloud deployment enhances data protection. EC2 enables cost-effective resource utilization. The platform

supports future expansion and integration. Overall, the proposed system modernizes recruitment using cloud computing. It demonstrates the effectiveness of EC2 in real-world applications. This project can be extended with AI-driven analytics and advanced recommendation models.

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