

Streamline Pro Next-Gen Recruitment Solution

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Abstract- An innovative full-stack project called "StreamlinePro Next-Gen Recruitment Solution" aims to transform the hiring process. With its modern technologies, this fully inclusive platform enhances the hiring process to satisfy the demands of administrators, HR professionals, and job seekers. The Job Board Application is developed around a powerful system for posting jobs and accepting applications. Experts in human resources can readily post job openings, and need to offer corporate papers to validate their skills. This ensures that reliable sources are used to publish job openings. Conversely, candidates can use the website to look for jobs that fit their qualifications and apply immediately. Posting resumes is required, and an applicant tracking system (ATS) reviews them after are uploaded. After reviewing the entries, the ATS rates the resumes according to their quality and applicability.

One of the primary aspects of the StreamlinePro Next-Gen Recruitment Solution is its exclusive referral mechanism. Employees in a company may indicate that are willing to suggest others. Job searchers can contact these references, and if accepted, both parties can communicate through an integrated chat system. This recommendation system encourages networking and enhances job-seeking opportunities by leveraging existing staff networks. The application also offers the capability of real-time job status tracking. Applicants can monitor the progress of their applications and receive alerts regarding their receipt, review, and acceptance by employers. This tool helps clarity and informs job seekers during the hiring process.

I. INTRODUCTION

The innovative "Job Board Application" was developed to enhance the hiring process by enabling HR teams better manage hiring and making it simpler for candidates to identify positions. With the help of a unique referral system and an advanced Applicant Tracking System (ATS), the platform evaluates resumes rapidly and verifies credentials to make sure job postings are reliable. Integrated chat capabilities allow users to apply for jobs, communicate with HR agents directly, and receive real-time application status updates.

The platform prioritizes dependability and shields job seekers from fake ads by implementing a credential verification system that ensures job postings are authentic and trustworthy. One of the platform's unique characteristics is its referral system, which boosts job seekers' chances of success by utilizing trustworthy

references and enabling them to use their own network to obtain employment. The integrated chat system, which facilitates direct and instantaneous communication between HR specialists and job searchers, is another important aspect. By giving both parties a clear and effective means of engagement, this communication channel removes the delays and miscommunications sometimes connected to regular recruiting procedures. By offering a seamless user experience, from job searching and application tracking to real-time communication and credential verification, the "Job Board Application" enhances the recruitment process, improving the efficiency of job matching and setting a new benchmark for the job market. The platform not only empowers job seekers but also equips HR professionals with tools that streamline hiring, making the entire recruitment cycle faster, more transparent, and effective.

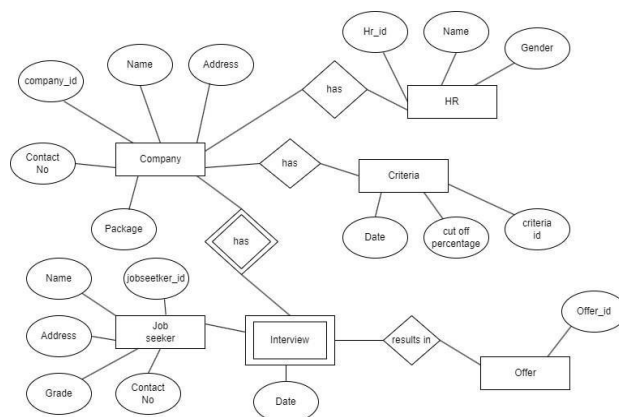


Fig.1 Entity relationship diagram for Stream line Pronext-Gen requirement solution

II. LITERATURE SURVEY

1. The IRJET paper highlights an E-Recruiter Portal designed to connect job seekers and employers. The portal provides features like job search, CV submission, direct communication with employers, and job postings. It emphasizes the importance of online platforms in today's job market, but also notes challenges such as information overload, costs, technical requirements, and user adoption.
2. It attempts the design of a career site in helping address the problem of the students of the University of Malaya who study computer science in contacting

employers to get employment. For this purpose, it tries to offer useful materials that will make the hunt for job a little bit easier. The study was said to find that the students had been displeased with the manner in which it is presently conducted.

3. The paper discusses the idea of using UiPath RPA to better the business processes as well as the advantages of RPA for an organization, like increased productivity, savings on the cost side, accuracy and expandability. The problems that need to be solved are not only process involvement and change management, but also during the implementation of the change and continuous improvement. That is just one of them. An online job portal based on Waterfall model is also investigated.
4. This paper discusses a web tool which the job searchers can register and apply posting the openings and evaluate the applications expedites the hiring process. The simply built with NodeJS, AngularJS & Sequelize ORM and it also has sophisticated search capabilities and can manage heavy traffic.
5. This discussed the rise in hiring post COVID 19 and how online job portals have really capitalized on the spike and share information, recruiter effectiveness and online job portals as an aid. A new employment portal is suggested to solve two problems that currently both companies and job searchers face by answering quicker, cheaper (or easier to cost) and more accessible questions.
6. The book describes the creation of a recommender system for an online employment site, that should match businesses and job seekers according to credentials and talents using CNN. Portals to Employment show the benefits of using such portals, which include information exchange, cost effectiveness, more engagement, saved time, successful matching, just to mention a few.
7. The job search portal uses an Android app and online application to link job seekers and companies. The Android app uses RESTful web services, while the web application utilizes Spring MVC, Hibernate and MySQL. Response time and throughput were tested with the system using Apache JMeter and the system stands by the testing. The design and execution of the project are effectively meeting user experience criteria for employers and job seekers.
8. It brings up how more and more people are relying on online platforms for employment, and possibly a lot more, among tech savvy people. It shows that registering on job portals has become a customary first step in today's job search of millions of job seekers worldwide. In addition, the effectiveness of the use of these sites of ind jobs varies widely: some job seekers are obtaining assignments and responses faster and some get no response at all.
9. The paper discusses building an online employment portal with Django so that makes the job search and hiring process easier for both companies and job seekers. Built with MVT architecture using Python Django, HTML, CSS, JavaScript and Bootstrap 5, it leverages this framework. Some of the portal's major features including job posting, application monitoring and user friendly interfaces for job searchers, businesses and administrators.
10. A way to create a Job Portal mobile application for UTHM students to provide them with job prospects is explained in the text. This program works as a hiring agency; employers may publish and maintain job openings, and students can search for employment based on predetermined criteria. The system is built using Android Studio and Java based on the Simple Software Development Life Cycle (SDLC) paradigm, with the database being Google Firebase to contain its data. It is about simplifying the hiring for businesses and simplifying the job search for students.
11. The project report is based on the creation of an online job portal by the group of the students pursuing B.Tech. The portal's main purpose is through an intuitive interface to simplify the hiring and job searching procedures. This study illustrates the system development using the agile process and multiple technologies such as Java Server Pages (JSP), AngularJS, Bootstrap and Hibernate framework. Essential features that are provided by the portal can benefit both the recruiters and the candidates.
12. The Advanced Training and Placement Web Portal (ATPWP) automates the operations taking place at the hands of Training and Placement Officer (TPO). It monitors resumes, helps students and alumni find appropriate employment opportunities, and allows the TPO to create practice exams and interviews.
13. The Proximity Search technology allows users to query terms close to one another, thus improving information retrieval degree and augmenting search results' precision. Secondly, this is a client server web based system, which is based on user search for relevant information quickly by calculating similarity values for precise as well as approximate matches.
14. This job outsourcing site was developed to ease the problem of little expertise in certain activities by introducing and exposing single working platform where companies can outsource work and commence working with service providers. This helps business goals being reached faster with optimum assignments of work to available people. It makes the outsourcing website easier, more organized and more efficient.
15. Hot Jobs Asia is a full e-recruitment platform with connecting employers and applications which match 'particular' job profiles both in domestic and abroad markets and thus reduces the process of recruitment. Trained specialists direct the system in providing

simplified cost effective value driven career resources and recruiting services.

16. Web scraping is defined as a process of collecting data from webpages with programs such as Python or with tools like Octa-parse and Parse-hub. Collect data then format it orders to use it for other analysis. The usage of internet and technology is increasing and thus recruitment has replaced more traditional ways of searching a job, say news games, newspaper advertisements and referrals. Online job portals have totally altered the employment space, by expediting the whole recruiting process from job advertising to interview.
17. JavaScript from Frontend to Backend is a very handy manual for giving you a quick overview of JavaScript web development. The book starts with core basics of JavaScript and goes further to create web components using VueJS for the client-side and server side programming. Then, comes data base administration with MongoDB and Mongoose and server side with Node.js and Express. Learning how to design a full web application by mixing different technologies will teach you the required abilities to transform into a full stack JavaScript developer.
18. Since 1991 when Tim Berners-Lee first created the first website, the world of websites and the growth of it have changed rapidly, and still continue to change so to this very day in 2021. In today's age, every company has a website to market its business online. Moreover, a lot of people use the websites to create their online portfolios. Furthermore, there are many web based software programs and apps.
19. Large scale, high concurrency, and large amount of data are significant themes for websites progress to the next generation of websites. More and more people are leaning towards using Node.js to build data intensive web applications. Benchmark and scenario tests to evaluate and compare PHP, Python-Web and Node JS. The experimental findings do provide some useful performance information, with PHP and Python-Web process way less requests in a given period than Node.js.
20. A No SQL database is MongoDB, which saves data with flexible schemas using documents that resemble JSON. Its popularity has increased over the years because of the versatility, scalability, and user friendly design. Apart from telling you a bit about MongoDB's main features, pros, and cons, this article also gives advice for how to use it the right and efficient way. It then looks at a variety of well-known MongoDB use cases, highlighting how flexible it is for dealing with different types of data storage requirements.

III. EXISTING SYSTEM

Among all the job recruiting platforms on the market, there are many with specific features. Basic features of

known platforms such as Indeed, Monster, Glassdoor and LinkedIn jobs are available to businesses and job searchers such as applicant monitoring and job listings. Unfortunately these platforms often lack crucial elements, such as integrated referral systems, sophisticated ATS and credential verification services. However, with LinkedIn and ZipRecruiter, thought of as market solutions for job listing, there are also very limited networking options and no real time applicant tracking. These approaches of today, while more than satisfactory in many cases, show the necessity of developing better complete, fast ways of meeting the varied requirements of the hiring industry.

Indeed: On Indeed, the employers can post their job vacancies without validating whether the job postings are genuine or if the candidates are really qualified for those vacancies. However, the lack of verification weakens platform certainty and may lead to issues like spam job postings or possibly fraudulent things, and does not — in fact — actually provide a comprehensive referral mechanism. Since job seekers are unable to rely on internal references to network with present workers inside of organizations, their chances to do so are more limited. Even with minimal features such as resume collection and candidate status updates, Indeed's application tracking tools are rather simple. For HR pros who are handling large application volumes at scale — resume scoring, algorithms, deep insights — it's less useful.

Monster:

- a) **No Credential Verification:** Similar to Indeed, Monster doesn't confirm if job advertisements or employers are legitimate. Similar hazards of possibly deceptive employment adverts arise from this lack of verification.
- b) **No Integrated Referral System:** The absence of an integrated referral system at Monster hinders job searchers from utilizing inside corporate references, which might improve their prospects of obtaining employment through personal networks.
- c) **Basic Applicant Tracking:** Monster does not provide a full leak Applicant Tracking System (ATS) that screens resumes employing second rate algorithms and metrics but provides simple applicant tracking tools. HR managers are forced to manually sort and apply simple filtering to apps to evaluate them.
- d) **Minimal Real-Time Updates on Application Status:** Monster only provides real-time application status updates for job searching applicants to a very small number. The applicants may be unaware of some important phases of the recruiting process which may lead to transparency suffered.

ZipRecruiter:

- a) **Job Listings Without Verification:** Like many other platforms, ZipRecruiter does not require employers to verify their credentials before posting jobs, which can lead to the posting of unverified or misleading job

opportunities.

- b) **No Referral System:** ZipRecruiter lacks a built-in referral system, meaning job seekers are unable to use personal or professional networks to boost their chances of employment.
- c) **Basic ATS Features:** While ZipRecruiter offers some applicant tracking functionality, it does not include advanced resume scoring or intelligent matching algorithms to help HR professionals quickly and efficiently filter candidates.
- d) **No Integrated Communication System:** ZipRecruiter does not have a built-in chat or messaging feature for communication between job seekers and employers, which can slow down the recruitment process and create gaps in communication.

IV. PROPOSED SYSTEM

Objectives

- Ensure Job Credibility by implementing a robust credential verification process for all job postings.
- Improve Applicant Evaluation through an advanced Applicant Tracking System (ATS) that efficiently scores and filters resumes.
- Enhance Networking and Referrals by integrating a unique referral system that leverages employee networks to facilitate job placements.
- Streamline Communication between job seekers and employers with an integrated chat system for real-time interactions.
- Increase Transparency by providing real-time status updates on job applications, keeping job seekers informed throughout the process.
- Improve Recruitment Efficiency for HR professionals with tools to manage job postings, track applicants, and schedule interviews seamlessly.

Approach

- a) **Credential Verification:** In order to validate their credentials HR professionals have to upload pertinent corporate documentation throughout the enrollment process. This raises the legitimacy and confidence for job searchers because all the job ads are from legitimate sources.
- b) **Advanced Applicant Tracking System (ATS):** The top ATS and resume scanning platform on the market also has a strong applicant tracking system (ATS) which analyzes and ranks the resumes according to importance and offers comprehensive information to HR managers. To be able to choose candidates properly and objectively is something that is possible.
- c) **Integrated Referral System:** There is a novel recommendation system here called StreamlinePro which is both for job searchers and employees to ask and pass references over. An integrated chat system promises application to

placement and lasting relationships between applicants and the HR.

- d) **Real time application tracking:** Job seekers receive real-time updates on the status of their applications, ensuring transparency and keeping candidates informed at every stage of the recruitment process.
- e) **Enhanced user experience:** Job search, application management and communication with ease is integrated into the platform making all users experience a simplified and effective platform.

V. IMPLEMENTATION

To facilitate the hiring process between job searchers and HR professionals, created a web based tool called the StreamlineProNext-Gen Recruitment Solution. Users first need to create an account and then HR specialists need to upload business credentials for the verification in order to allow only authentic job postings. The people who would like to job search in the specific roles can look at them and apply. ERP users can post these vacancies along with relevant data. However, it's important for HR professionals to know the best way to prioritize the prospects through Applicant Tracking System (ATS) that helps in scoring resumes versus the job criteria to prioritize. Using a special referral system, employee can offer and manage references, allowing job searchers to get access to personal networks.

Application tracking is forwarded to applicants in real time and HR has the same capability for chat integration with the applicants. Admins can then confirm the HR credentials of these listings to provide the credibility. Integration of these aspects makes the platform help significantly improving the efficiency, transparency and networking potential of the platform.

Fig.2 shows the entire system architecture diagram with a flow from user, HR and referral provider and admin.

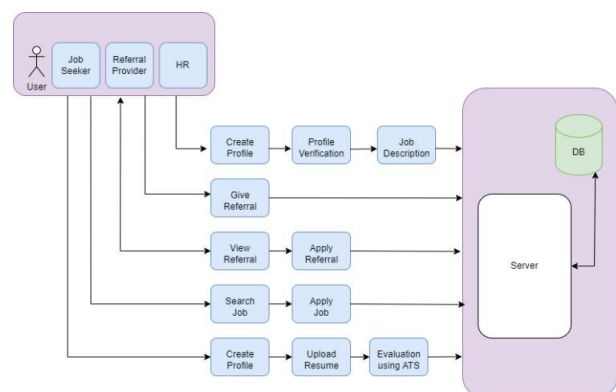


Fig.2 Architecture diagram of StreamlineProNext-Gen Recruitment Solution

Technology used: ReactJS, NodeJS, MongoDB

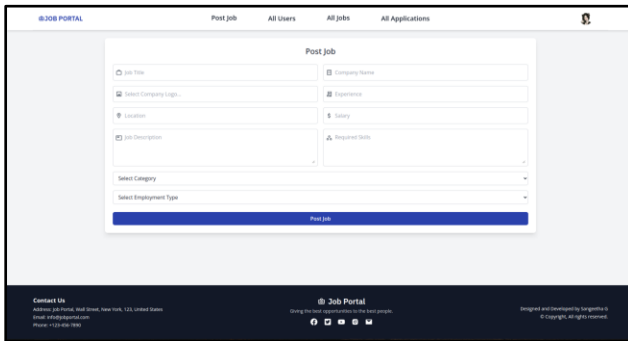


Fig.3 The verified HR professional posts job vacancies in the portal by specifying the job description and the skills required for the position to be hired.

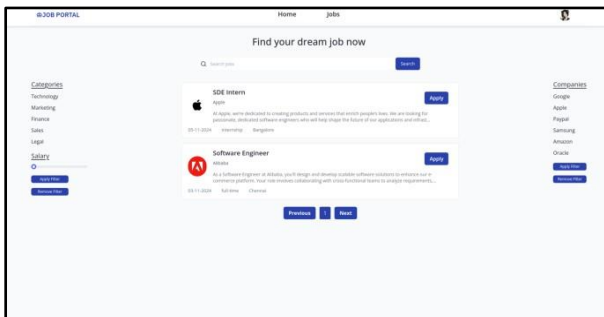


Fig.4 The applicants can view the live job postings and can filter or search according to their skills.

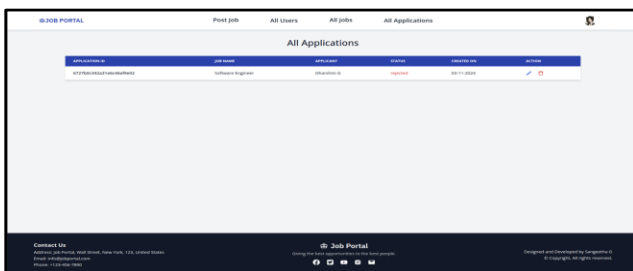


Fig.5 The HR can view the applications received and can change the status of the application after viewing the applicant's resume.

Comparison of existing and proposed system:

Despite the rich capabilities offered by Indeed, Monster, and other job recruitment platforms, many important holes are left unfilled. There is no mechanism in place on these platforms for checking job postings, meaning you might be looking at an inaccurate or even a fraudulent listing. Without a credential verification process, job seekers have no way of knowing whether or not certain job postings are legitimate, calling into the question platform confidence. Furthermore, HR professionals find it awkward to scan through more applications making them quite extensive, since most of the applicant tracking solutions are still rudimentary on resume collection and status update, and are lacking in sophisticated sorting and smart resume analysis.

Further, the existing platforms do not have integrated referral systems that bar the candidates from access to professional networks which can enable better placement prospects in the job. Referrals are a cornerstone of the hiring process for many organizations as the candidates benefit in the competitive hunting and the organizations get to referred possible workers in a manner which is reliable. If there isn't an in platform referral system, job seekers can't interact with hiring organization's current staff, and can't take advantage of internal referrals that could potentially get them in the door. Consequently, this flaw limits candidate ability to network within organizations and presents constraints on the resulting networking opportunities that could increase the likelihood of more successful and tailored recruiting experiences. Furthermore, the absence of integrated communication tools such as real-time chat means that interactions between employers and job seekers are frequently off-platform or delayed, which leads to ineffective communication and gaps in the hiring process.

This drawback is overcome by suggesting the solution of putting in place an elaborate feature set which is intended to enhance user's engagement, efficiency and credibility to mitigate these challenges. It ensures that all the job postings are authentic by making HR professional upload official records as part of a thorough credential verification process. The system additionally provides an Advanced Application Tracking System (ATS) featuring sophisticated resume scoring and assessment for unbiased candidate grading by HR managers to find the perfect match faster. StreamlinePro, an integrated referral system, allows internal network to be built for the purpose of hiring by means of suggestions given about the candidate to the employees that are job seekers. An integrated chat feature enables candidates and recruiters to converse directly in real time to shorten the recruiting time frame.

Algorithms Used in ATS:

ATS often depends on numerous algorithms and methodologies to review and score resumes.

Keyword Matching:

Keyword matching happens to be one of the basic methods Applicant Tracking Systems (ATS) use to screen resumes throughout the hiring process. It guarantees that resumes with the most pertinent keywords will be evaluated upfront. This is how it operates:

Resume Parsing:

Then, using the resume, the applicant tracking system (ATS) identifies key components, i.e. education, job experience, abilities and personal information, that it will then translate into structured data. This stage is important because it allows the system or the recruiter to read and interpret the resume in a consistent manner as it enables the system to know what all the other resumes are saying even

if don't say it all in one line.

Keyword Extraction:

This generally includes terms to fulfill a position, such as: terms of title, certificates (as "Certified Public Accountant"), experience (as "Java", "Python"). And these keywords are meant to be typed from the job advert posted by the applicant tracking system (ATS), depending on them as a benchmark by which it should evaluate the degree to which a resume is relevant. Fig.6 shows key word extraction in resume.

Keyword Matching Process:

Fig.7 shows keyword matching. After the words or phrases are derived from the job description, the keywords are run against each resume and the ATS determines if those keywords or phrases appear in the given resume. Also, it takes care of synonyms and variants of the keywords to ensure that the machine doesn't pass off potential matches. This could refer for instance to "Software Development", if the job description then so the system could match for phrases like "Software Engineer" or "Application Developer" expressing essentially the same thing.

Keyword Weighting:

The matching method does not treat all keywords equally. Some of the ATS platforms have some of the keywords assigned different weights depending on how the platform considers the keywords to be important. For example, a general work experience could possibly be less valued than a set of technical credentials or abilities. It means that while evaluating resumes, the most essential credentials will be given priority.

Keyword Frequency and Context:

But the presence of the keywords may not be enough, and the ATS might consider frequency and context, as well. For example, the candidate will be positively scored if he mentions a lot of the word "Python" in areas like job experience or skills, as it indicates you have solid knowledge of the technology. The algorithm also makes sure that keywords do not appear in useless parts, but appear in important parts like job experience.

Exact Match vs. Fuzzy Matching:

A standard applicant tracking system (ATS) relies on a keyword match so resumes with the exact term or phrase in the job description rank better. On the other hand, more sophisticated ATS systems employ fuzzy matching that considers synonymous or similar phrases. Let's take for example the situation where in a job description you have 'customer support' and with an advanced system you can also use 'technical support' or 'client service' as appropriate matches.



Fig.6 Key word extraction in resume

VI. FUTURE ENHANCEMENTS

There are many improvements in the StreamlinePro Next-Gen Recruitment Solution that could improve it greatly in usability and geographical scope. Along with AI and machine learning's ability to play a part in resume and job matching more personal and relevant to the job seeker, the platform will become more individualized. For instance, some preliminary interviews could be done with the power of AI, some interview scheduling completely automated. Advanced analytics can help HR managers to learn about hiring patterns and candidate performance and change in recruitment tactics. Being worldwide, adding multilingual, and adding block chain technology into the platform for the secure credential and employment verification will be improved the platform's accessibility and trust.

As mobile application is created, it would increase user comfort as HR professionals and job searchers would begin doing activities while working on the road. Social media integration, gamified testing and skill based assessments may bring further features that will make it complete, smart and become a well-known hiring solution.

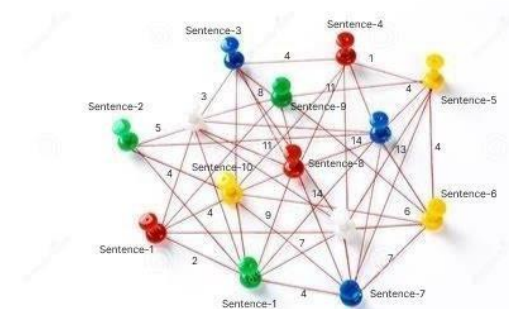


Fig.7 Key word or sentence matching one with another.

VII. CONCLUSION

StreamlinePro is a complete and next generation Recruitment 360 Solution designed to help HR professionals and Job Seekers alike to navigate the main hurdles in the recruitment process. The platform offers a simplified, efficient and transparent way of hiring through integration of the latest technologies such as an Applicant Tracking System (ATS), recommendation System and

integrated communication tools included. It computerizes scoring, guarantees validity by authenticating documents, and network through recommendations. The platform in addition makes the hiring process easier and also it facilitates the communication of candidates and companies more meaningfully. Considering all of this, StreamlinePro hits the highest notes when it comes to hiring technology, delivering a new advanced, durable and straightforward answer that is ready to expand as improvements thrum along.

With integrated chat functionality and realtime job status monitoring throughout the process, HR professionals and job seekers stay in the loop on misunderstandings and delays. Also, the platform ensures legitimacy and confidence by requiring HR experts to approve their credentials and guarantee that job ads come from reliable sources. By centralizing all of these functions in one single unified dashboard, Stream line Prosolves the largest parts of the hiring puzzle: resume evaluation takes time, communication can be difficult, and there aren't always good ads to advertise jobs on. The cutting edge design curbs the hiring technology bar and provides a more open, efficient and tailored experience for everyone involved.

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