**Professional Dating**

An unconventional approach to job recruitment

Rhys Jones†  
 Computer Science  
 Virginia Tech  
 Virginia Beach VA, USA  
 rhysj22@vt.edu

Kushal chhetri  
 Computer Science  
Virginia Tech  
Blackburg VA, USA  
 ckushal02@vt.edu

Kian Pierce  
 Computer Science  
Virginia Tech  
 Richmond, VA USA  
 kianp20@vt.edu

Amr Binmubarak  
Computer Science  
 Virginia Tech  
Ashburn,VA, USA  
amr10mubarak@vt.edu

Samer Jouhar  
 Computer Science  
 Virginia Tech  
Blacksburg, VA USA  
 [samerjouhar@vt.edu](mailto:samerjouhar@vt.edu)

Andrew Thibodeau  
 Computer Science  
 Virginia Tech  
Blacksburg, VA USA  
 tandrew03@vt.edu

**ABSTRACT**

Navigating the current job market presents many unforeseen challenges for both job seekers and employers alike.

With the overwhelming volume of job listings and difficulty finding positions that align with a seeker's skills and preferences, traditional job search platforms often lack the user-friendly interface and personalized experience that a job seeker would expect in a search platform.

The proposed solution, which we deemed “OkHire”, provides a revolutionary, yet unorthodox, approach to job hunting. Inspired by the interface of Tinder, the solution addresses the complexities of job searching by utilizing advanced algorithms to analyze a user's profile comprehensively. By providing professional factors including work experience, education, preferences, and desired job criteria the product will provide a far more personalized approach to job listings. Users can see their potential job matches that fit their criteria and decide if they’re interested by swiping. In addition, employers can post a specific position and provide several qualifications that they are looking for (work experience, education, etc.). The algorithm will then gather potential candidates that align with this criteria and recruiters can swipe if they think a particular individual would be fit for the position.

This product aims to revolutionize the job search experience, empowering users to find fulfilling career opportunities more efficiently while helping employers connect with qualified candidates effectively.

**INTRODUCTION**

Many new graduates entering the workforce face the issue of finding a career. The daunting task of researching companies and filling out job applications for each one is time-consuming and monotonous. Similarly, the resources companies invest in seeking out candidates to fill positions frequently fail to come to fruition. The time investment for both parties can be optimized greatly. On top of these issues, the lack of standardization throughout the job application process is a headache for companies and job seekers alike.

Our team proposes an interface similar to a dating application that allows recruiters to create a profile for their company and add open positions, including preferences and criteria for potential candidates. Job-seekers will also be able to create accounts including their interests, preferred career fields, and preferred company attributes such as size and location. The recruiters will be able to view job-seeker profiles and the job-seekers will be able to view company profiles in a Tinder-like interface. Recruiters and job-seekers can swipe left or right on the corresponding profiles. If both parties swipe right on the other’s profile, indicating an interest in that job-seeker or that position listing, the job-seeker and recruiter will be able to chat privately to further discuss information on the company’s or the job-seeker's profile. This interaction can quickly lead to an interview or a job offer for the job-seeker and a filled position for the company.

The proposed solution will alleviate these issues which complicate the job-search process. Recruiters will fill out a standardized set of questions regarding their company such as company size, core values, career field, and job location; job-seekers will be able to filter their search based on their preferences. With a standard set of information available from all recruiters regarding their respective companies, job-seekers will have an easier time finding positions that both interest them and that they may qualify for. This relieves the job-seeker of the task of searching multiple job posting sites and allows them to view company data at a glance while comparing company statistics and information regarding the positions they are applying for.

Similarly, the proposed solution will facilitate the employee search that many recruiters handle for their company. The recruiter for a company will create an account for their company and fill out some standard questions that job-seekers may be interested in as mentioned previously. Recruiters are also able to enter applicant preferences such as experience, academic year, or degree field. With this information, the recruiter will be given the profiles of job-seeking users who fit the recruitment criteria. In this way, the recruiter can see applicants’ basic information, express an interest in a particular applicant, and then request further information or interview in a private conversation. The process of finding suitable applicants will be expedited for all recruiters and alleviate the workload required to find possible applicants to fill job positions.

Our proposed solution will benefit job-seekers and recruiters alike by providing a faster, customizable, and more organized means for searching through numerous job positions and applicants. The Tinder-inspired matching system will ensure applicants and recruiters only see companies and job-seekers who fit the criteria and preferences set by the user. This will allow recruiters to quickly scan through a large amount of applicant data much faster than would be done in person and provide a one-stop location with standardized information for job-seekers to reference, mitigating the time investment for both parties.

**RELATED WORK**

The algorithm used by Tinder, analyzes a user's behaviors, preferences, and personal information to provide several series of potential “matches”. The algorithm used in our project will perform similar tasks based on criteria we specify and specified by the user when completing a profile. This will include professional qualifications, expectations, and specifying what the user is looking for (recruiting or job-seeking).

**PROCESS**

Our team used the **spiral model** because it emphasizes risk assessment in an iterative method.

The spiral model is a software development process model that combines iterative and incremental development with systematic, controlled aspects of the waterfall model. So,with an unorthodox approach to job searching we want to ensure that our product is as safe and efficient as possible while promoting a professional appearance. The spiral model typically consists of four phases: Planning, Design, Construct, and Evaluation.These phases are repeated in iterations, with each iteration resulting in a more refined version of the software product. This iterative approach also ensures that feedback from users and stakeholders can be incorporated into subsequent iterations, leading to continuous improvement. Therefore, a spiral model will allow us to repeatedly assess inherent risks and how we can mitigate them.

**HIGH-LEVEL DESIGN DECISIONS**

The proposed design of "OkHire" aims to integrate advanced artificial intelligence to revolutionize the recruitment process. The plan includes a scalable cloud-based architecture that supports rapid expansion and adapts to growing user demands without compromising performance. We intend to deploy a microservices architecture to enhance modularity, allowing each component of our system—like user profile management, job matching algorithms, and communication tools—to be developed and scaled independently. Critical to our architectural strategy is a robust approach to security and data privacy, ensuring compliance with GDPR and other data protection laws through encryption, secure data storage, and stringent access controls.

**IMPLEMENTATION PROCESSES**

The implementation of "OkHire" is planned to follow Agile methodologies, promoting flexibility and iterative progress through sprints and regular feedback adjustments. We will use a combination of Python for its extensive libraries and support for machine learning, and React for a responsive front-end user interface. Containerization with Docker is chosen to ensure consistency across different development and production environments. A CI/CD pipeline will be set up from the beginning, using tools like Jenkins for automation of testing and deployment, which facilitates a smooth and continuous integration of new code and features into existing operations.

**TESTING APPROACH**

Our testing strategy encompasses several layers of checks and balances. Initially, we will implement unit testing to ensure individual components function as expected. Integration testing will follow, to make sure these components work together seamlessly. System testing will validate our entire application against the requirements. Prior to deployment, user acceptance testing (UAT) will be conducted to gather feedback and ensure the system meets user expectations. Performance testing will also be conducted to evaluate the system’s behavior under various conditions. To facilitate these processes, we will utilize automated testing frameworks such as Selenium and JUnit.

**DEPLOYMENT AND MAINTENANCE**

For deployment, we plan to use Kubernetes to manage our containerized services efficiently, providing high availability and load balancing. We will implement a blue-green deployment strategy, which allows for minimal downtime during deployments and an easy rollback option if issues arise with the new release. Post-deployment, our maintenance strategy includes real-time monitoring of the system using tools like Prometheus and Grafana to ensure operational health and quickly address any issues. Regular updates and patches will be scheduled to improve functionality and address security vulnerabilities identified.

**CONCLUSION: LIMITATIONS AND FUTURE WORK**

As the "OkHire" project remains in the conceptual stage, its future success hinges on several strategic decisions and the overcoming of inherent limitations. Currently, a primary limitation is the reliance on advanced artificial intelligence and machine learning technologies, which, while powerful, introduce complexities in terms of transparency and interpretability. The evolving nature of AI regulations and ethical considerations poses a challenge to ensuring that our algorithms are both effective and compliant with global standards. Additionally, the integration of these systems into the complex landscape of existing HR technologies and databases requires meticulous planning to ensure compatibility and security.

Looking forward, the "OkHire" team is committed to addressing these challenges through a series of strategic initiatives. We plan to enhance the transparency of our AI decision-making processes, making them more accessible and understandable to our end-users. This will involve developing more sophisticated explanation interfaces and providing users with insights into how the AI makes its recommendations. Furthermore, as data privacy remains a paramount concern, exploring the potential application of blockchain technology could offer a more secure and transparent framework for handling sensitive user data, thus enhancing trust and compliance.

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