Jobstackr - The Missing Piece of Your ATS

Github: https://github.com/PrinceDisant/jobstackr

App: https://www.jobstackr.com/

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Introduction and Problem

HR professionals often want to increase the efficiency of the hiring process using an Applicant Tracking System (ATS). The primary purpose of ATS is to help HR professionals filter out resumes that may not be a good fit for the job. ATS providers can help companies set up customized screening criteria to eliminate any resumes that trigger a flag.

The goal of an ATS is to reduce the time spent by staff reviewing resumes, which can lead to lower hiring costs, and to provide a method to track the hiring process's efficiency.

While these systems are capable of providing some filtering, they could lead to employers missing out on potentially great candidates that may not appear to fall within the criteria configured in the filters.

Problem Impact

Getting real-world insights from a member of Team Alpha, we recognize that resumes which are not filled with the right keywords are eliminated even before they reach HR professionals. The reasons why ATS eliminates these resumes vary; most of them are not related to the candidate's qualifications and skills (Pandologic). We classify three main factors that can make ATS become a barrier for job seekers to reach their employers:

1. **Technical limitations**

- Automatically eliminate any resumes that ATS cannot read or interpret
- Misread PDF format
- Being unable to read most graphics
- Inaccurately classify data retrieved from unusual formats

2. **Lack of human elements**

   Additionally, ATS lacks human elements, which should be embedded in the hiring process (Pandologic). Simply letting ATS decide which resumes would be chosen poses a high risk of filtering out potential and qualified candidates.

3. **Lack of soft skills screening**

   Many ATS solutions are poor at detecting so-called "soft skills" when evaluating resumes (Forbes). HR professionals may not use "leadership skills" or "excellent communication skills" in the screening criteria section; likewise, not every candidate will explicitly state their skills in the same ways. Eventually, candidates who possess excellent soft skills are eliminated by the system.

According to a study done by LinkedIn, hiring managers said that 59% of soft skills are hard to find and that this skill gap is negatively impacting company productivity (Techcrunch). Another survey done by Wall Street Journal in 2015 pointed out that 89% of the 900 executives joining the survey said it was difficult to find people with the requisite soft skills. Some surveys were done in the UK and Canada also showed that soft skills are more important to employers than technical knowledge.

We see the dilemma here when employers are looking for candidates with soft skills and yet, they are using ATS systems which heavily focus on keywords related to hard skills.

Our Solution

The algorithm we are using to create Jobstackr takes into account the importance of soft skills and hard skills.

The algorithm we're using identifies the keywords it is looking for in your CV; the more highly rated the candidate will be, increasing the likelihood of the first selection stage to land in the hands of the recruiter.

The algorithm does not require human intervention. It searches for recruiters' keywords as well as built-in factors that account for an applicant's soft skills, which means that if a candidate has a profile that matches because they have previously held a comparable role or completed a relevant project.

The issue with the ATS algorithm is that it excludes some persons from the recruiting process just because they lack certain technicalities, which can result in firms missing out on applicants who can provide considerable commercial value.

The algorithm we used will produce better results than a standard ATS since it will analyze both hard and soft skills and grasp a candidate's potential, rate of success in future positions, and possibility of being able to add the critical abilities that are now lacking.

In a nutshell, the website we are building will look beyond a simple resume and will actually look at the whole package.

The Gale-Shapley Algorithm

The Gale-Shapley algorithm can be used to match job seekers with good soft skills to potential employers. In the first round, the algorithm matches job seekers with good soft skills to potential employers who have posted job openings that match their skills. In each subsequent round, the algorithm matches job seekers with good soft skills to potential employers who have posted job openings that match their skills and who are looking for employees with those skills. The algorithm is repeated until all job seekers with good soft skills have been matched to potential employers.

The Gale-Shapley algorithm is guaranteed to find a stable matching between job seekers and employers. In other words, there cannot be a situation in which a job seeker with good soft skills is matched to an employer who does not value those skills, and vice versa. This is because the algorithm takes into account both the preferences of the job seekers and the preferences of the employers.

The runtime complexity of this algorithm is O(n^2), where n is the number of job seekers or employers.

In its most basic form, the stable matching problem takes as input an equal number of two types of participants (for example, n men and n women, or n medical students and n internships) and an ordering for each participant indicating their preference for whom to be matched to among the participants of the other type. A stable matching exists at all times, and the Gale-Shapley method solves the algorithmic challenge of finding one. A match is not stable if and only if the following conditions are met:

There is a first matched set element A that favors some given second matched set element B above the element to which A is already matched, and

B also prefers A to the element with which B is already associated.

In other words, a match is stable if there is no pair (A, B) in which both participants prefer their matched mates to each other.

```
Variables:
job seeker = js
potential employer = pe
algorithm stable_matching is

Initialize js ∈ JS and pe ∈ PE to unemployed
   while ∃ unemployed job-seeker js who has a potential job/employer pe to apply to
      pe := first employer on js's list to whom js has not yet applied
      if ∃ some pair (js', pe) then
         if pe prefers js to js' then
            js' becomes unemployed
            (js, pe) become employed
         end if
      else
         (js, pe) become employed
      end if
   repeat
```

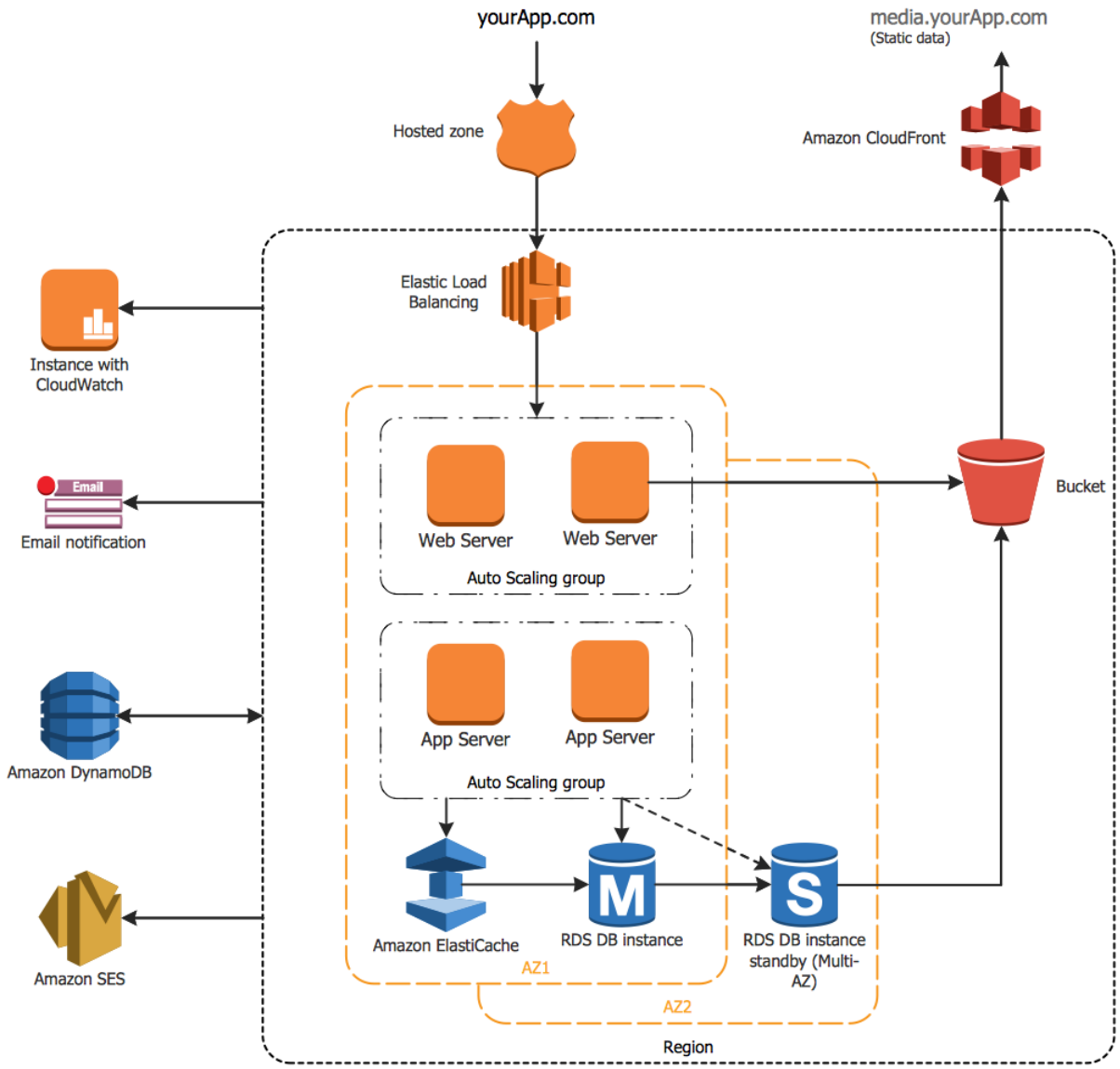
Product Roadmap

We anticipate that the Jobstackr's development will be separated into five major stages, with the first already in-progress.

Stage 1 - Inception

- Forming ideas
- Developing the software in first iteration

Stage 2 - 1st round AWS deployment architecture



Stage 3 - Proof of Concept

- Test the system with real JDs from real employers
- Obtain and create a data pool of the applicants' resumes.
- Crosscheck if the rankings match the employers' requirements.

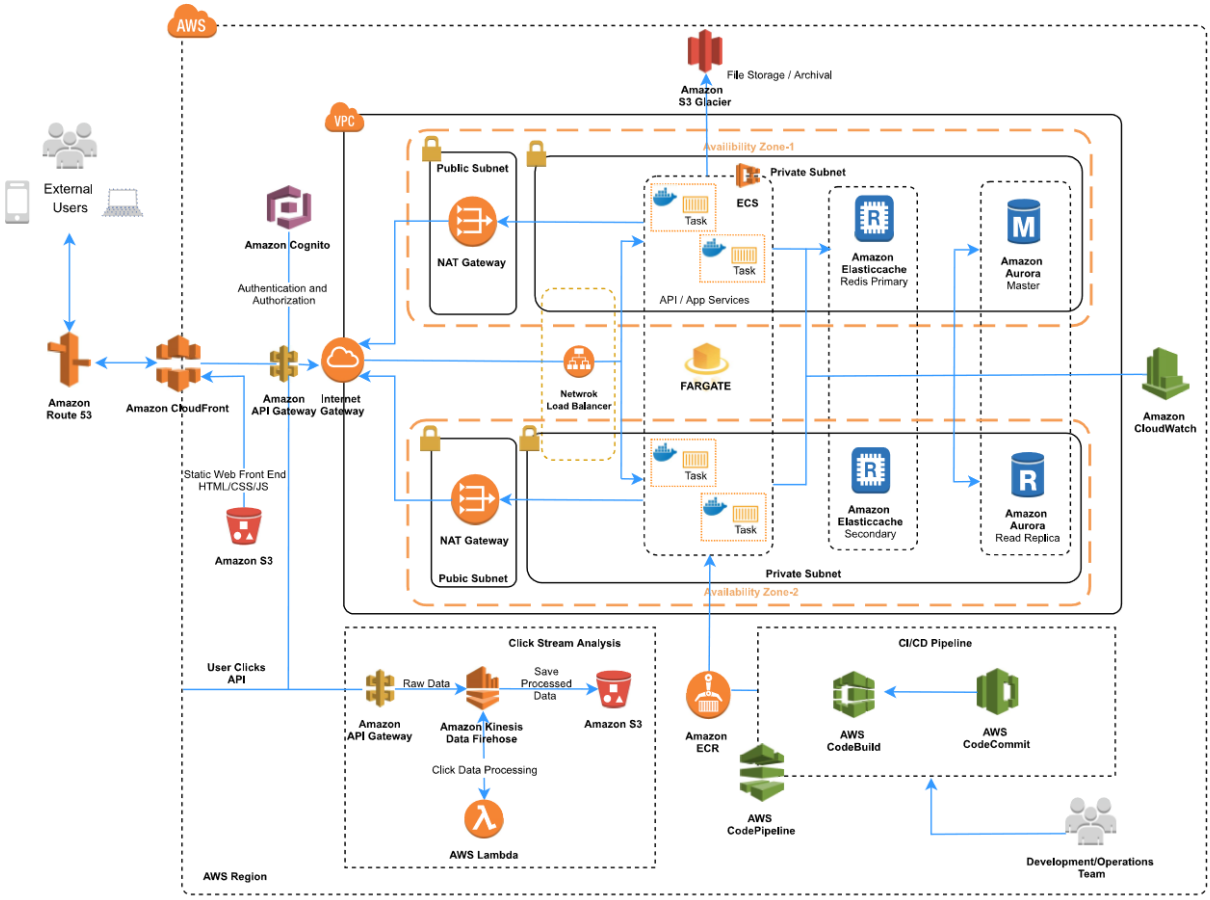
Stage 4 - Marketing

- Set up alliances with tech companies in NL

- Engage in marketing initiatives to educate consumers about the benefits of Jobstackr, such as PR articles, social media postings, and storytelling.

Stage 5 - 2nd round AWS deployment architecture

- Performant
- Scalable
- Secure
- Resilient



FAQ

For Employers

Q1) Where can I find the Signup Button?

Ans 1) Authentication is not required for you to try out this application. But you can do so by clicking the *Registration* button which is available on every page at the top right corner.

Q2) What details are required for sponsored Jobs?

Ans 2) The standard job description. The algorithm takes care of everything else!

Q3) How much should I spend each month?

Ans 3) This is currently being discussed. Please contact us if you have any thoughts for how much you would pay for such a service and for additional information.

Q4) How will I benefit from my current Automatic Tracking System (ATS)?

Ans 4) The Automatic tracking system filters out some good applications due to the missing keywords. Leaving good potential applications as an ultimate loss for the Employer.

Q5) Will the jobs I sponsor reach people on other websites?

Ans 5) We are currently planning to post the applications on another Job search website and will get back to it with a plan soon.

For Job Candidates

Q1) How can I enroll myself?

Ans 1) The enrollment is a four simple step process. The candidate has to first make an account, upload their resume, and apply to the group of jobs of prospective employers they are matched with.

Q2) How is it different from other websites that I currently use for my application?

Ans 2) 98% of Employers use ATS to filter the applicants which leaves most of the employees to be filtered out by not using certain keywords or language. This is a downside for employees and employers. We use a matching algorithm where you would be applying to only specific employers with whom you're matched with leading to more targeted applications.

Q3) Will I be able to connect directly to the employers?

Ans 3) You could be connected to the employers whom you're matched with followed by a regular selection process.

Q4) What is the wait time of my application?

Ans 4) The process is usually faster as the employers will be receiving lower application volume due to target candidates who would only be making an application.

Project Team

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