

***SE* PROPOSAL**

PROJECT TITLE:
Resume Recommender

GROUP MEMBERS:

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1. Overview

Hiring the right person for the right job is a common challenge faced by all companies. Especially for positions with a large number of applicants the search for the right candidate(s) can feel like looking for a needle in the haystack.

The major objective of our system is to take the current resume ranking system to other level and makes it more flexible for both the entities that are the candidates or job seekers and client companies who are hiring the candidates.

Our system help candidates to get hired by such a company or an organization who really worth their ability and their skill sets. Where our algorithm will work in such a way that with the help of the previous result and previous ranking constraints, it will try to optimize the current result, which we called it Machine Learning. This will make sure that the relevant candidate is been hired for that particular vacancy. You can say best possible candidate.

Client Company's aim would be to create such a team which works best in the company's interest. Where our system help the organization to make out the best possible candidates list according to their given constraints and requirement for that particular vacancy. This kind of approach, will help our hiring sector to improve like anything and make it more efficient as the relevant person is getting a relevant job. So there would be no regrets for both the entities, Client Company and that hired candidate. Hence satisfaction will be achieved.

The practical motivation for our learning approach is the availability of a relatively large dataset which contains real-world job ads, original CVs of the applicants for these jobs as well as information about which candidates were hired in the end of the recruitment process. We will refer to this dataset as the hiring decisions. Another, much smaller dataset contains human relevance judgements for a number of job ads and CVs of people who did not necessarily apply for the given job (in this thesis referred to as the relevance assessments).

2. Project Detail

2.1 Project Goals

The goal of this project is to extend the search and ranking component of an existing commercial recruitment software package. In particular, we target the ranking component of a CV search engine, which is responsible for scoring and ranking candidates' CVs for queries (either issued by users or automatically translated from job postings).

Functional goals

- Our CV recommender extracts relevant information such as name, address, skills and previous work experience from original CVs (e.g. given as PDF or DOC documents) and transforms them into a searchable semi-structured format.
- The search engine indexes parsed CVs and enables searching with semi-structured queries as well as through search facets and tag clouds. CVs are assigned a relevance score with respect to the query by the search engine and are ranked accordingly.
- CV recommender extracts relevant information from vacancies such as the title of the advertised position, skill requirements and other job-opening-related keywords.
- The query generation component automatically generates semi structured search queries for finding matching candidates in the document collection.

Technological goals

- We will work on web-based environment with the help of REACT.
- For data storage we will use MongoDB.
- And for the implementation of algorithms we will use python and its various libraries.

Quality goals

The major goal of our system is to take the current resume ranking system to other level and makes it more flexible for both the entity.

- 1) Candidates, who has been hired.
- 2) Client company, that is hiring the candidates.

This kind of approach will help our hiring sector to improve like anything and make it more efficient as the relevant person is getting a relevant job. So, there would be no regrets for both the entities, client company and that hired candidate. Hence satisfaction will be achieved.

Constraints

- Cost of hiring is high.
- Potential candidate may lose the opportunity because of ambiguous keyword matching.
- Resumes needed to be in a specific format.

2.2 ProjectScope

Our project is designed to extract all the information about the candidate only through his/her resume and after extraction it stores the information in a centralized database, finally ranking them and giving the top results to the HR recruiter according to their specifications.

The system as of yet doesn't track the candidates on social media sites which could help in analyzing the personalities of the candidates and whether he/she is a perfect fit for the post. We cannot determine the perfect candidate without their personality information but our algorithm recommends the near perfect ones.

2.3 ProjectTeam

Name	Availability	Comment
Eisha Tir Raazia	anytime	Web developer/Frontend and backend integration
Maham Tariq	anytime	Backend/Database analyst and Designer

2.4 ExistingWork

As the industries have grown, their hiring needs have rapidly grown. To serve this hiring needs, certain consultancy units have come into existence. They offered a solution in which the candidate has to upload their information in a particular format and submit it to the agency. Then these agencies would search the candidates based on certain keywords. These agencies were middle level organizations between the candidate and company. These systems were not flexible as the candidate has to upload their resume in a particular format, and these formats changed from system to system.

The uniqueness of our project is that it allows the candidates to upload their resumes in flexible format. These resumes are then analyzed by our system, indexed and stored in a specific format. This makes our search process easy. The analyzing system works on the algorithm that uses Natural Language Processing. It reads the resumes and understands the natural language/format created by the candidate and transforms it into a specific format. This acquired knowledge is stored in the database.

2.5 User Stories

As a job seeker, I want to be able to provide my resume and apply for job vacancies so that I may find a good job where I can work to fullest and benefit my employer. As a company, I may be able to provide a job vacancy and its description so that I can find the right person for the job out of the one that are being recommended by the system.