

# CV Ranking System and Portfolio Detection

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**ABSTRACT:** In recent times there is an increase in population and since of that plenty of individuals apply for one position of job. For this every single applicant provide his/her CV which contains its biodata, academic records and skill set. Within the present times the human resource department has to manually undergo all the CVs then they call the eligible candidates for an interview. Even after this much of human effort this method isn't efficient and involves manual reading of documents (CVs). Because of this the human resource requires many HR officers and plenty of their time. In this project we'll automate this process with the assistance of web technologies and machine learning algorithms so we should not depend on humans for ranking the CVs and try this process in more efficient and faster way.

**KEYWORDS:** Flask, Machine Learning, MySQL, Server, TF-IDF

## I. INTRODUCTION

There is a large workload on the human resource department to pick out the proper candidate for a particular job profile which would successively supply an expert workforce for the organization from a large pool of candidates. Solution: The proposed system will enable a simpler and efficient way to short-list submitted candidate CVs from an oversized number of applicants providing a uniform and fair CV ranking policy. This could be legally justified. The system will rank the experience and key skills required for a particular job position then the system will rank the CVs based on the experience and other key skills which are required for a particular job profile.

This system will help the HR department to simply shortlist the candidate supported by the CV ranking policy.

## II. PROPOSED SYSTEM

We made an internet site where the recruiter can post jobs from the admin side he is hiring for. From the client-side, the candidate needs to register for the online site and he will browse for job posting. Each job posting will have a singular ID. And using that ID he will upload his resume which will be able to be stored for further processing. And thereafter the system will ranking system will rank all the candidates and will show admin the most fitted candidates for the job.

## III. MODULES

Our project is consist of mainly three modules:-

### 1) Module 1

This module contains the front end and also the visual aspects of the project. Within the user side, the user will be able to log in browse the job openings, and apply for the job by uploading its resume. And on the admin side admin will be able to post job openings and provide 3 ideal resumes to teach the system what kind of resume the admin wants. The candidate's ranking will be shown to the admin on his view. And then admin will conduct an online personality check test. This exam will be MCQ-based and will be held on the same site to further shortlist candidates for an in-person interview.



**Fig. 1. Admin side**



**Fig. 2. Client side**

## 2) Module 2

This contains all the backend-related functionalities of the project. The backend of the project is created using Python's framework flask. The server to manage all backend processes is created using a flask. It'll help us to take resumes and data from the user and also to post job openings. We are using MySQL database to store both admin and user data. MySQL is a relational database.

## 3) Module 3

This module accommodates the machine learning part. For machine learning, we are using TF-IDF (term frequency-inverse document frequency) which is a machine learning algorithm. It's a numerical statistic that's intended to reflect how important a word is to a document in a document. We will parse the entire cv of the user and then using this algorithm together with the ideal resumes which are provided by the admin we will rank the applicants.

#### IV. IMPLEMENTATION DETAILS

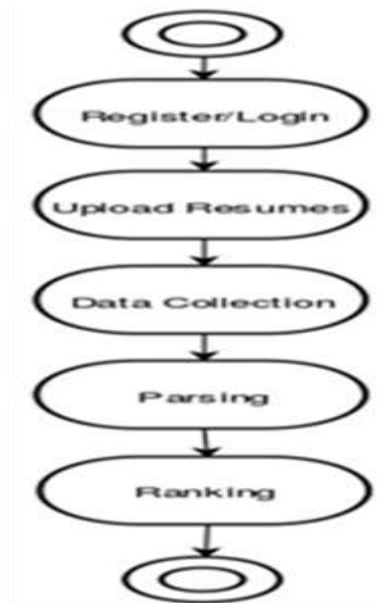


Fig. 3. User flow

The System Architecture consists of two modules

1. Candidates.
2. Company's CV Ranking System

Candidates Consist Of:

**a) Domain Establishment:**

This module is responsible for creating user accounts and database creation as the proposed system is domain independent and would be used by multiple users.

**b) Registration or Login Module:**

If the new user wants to interact with our system. he needs to simply register into our system by completely filling details i.e. validation. If the user is already exists, he needs to login.

CV uploading:the candidate has to upload the cv in the pdf format. So, that the parser can sort the resumes and store it properly into the database.

**c) Job search:**

skilled professional who wants to get hired by such a company or an organization who really worth their ability and their skill sets. They will be able to make sure that the desired position is made available to a particular candidate. You can say best possible candidate.

**d) Recruiting test and results:**

I. Give Test: After successful login, candidate can now proceed with online test base on company's selection criteria.

II. View Results: Once the recruiting process is completed by the company, and the time limit has ended. The shortlisting mail will be sent to the selected candidates & they will be able to view their rankings.

Company's CVS Ranking System Consist Of:

**a) Parser System:**

The parsing module is responsible for interpreting the document, and save it in a json format, which can then be used to store the module. Then, the rating module is going to be to use a json file, and to find out the applicant's data in accordance with their abilities, and this information will be stored in the database.

**b) Testing module and their result**

According to the selection criteria or procedures of the company , and they can add any kind of test, they also add, update, necessary, questions and answers, personality test, testing, coding etc., the test will be based on the multiple-choice questions.

A candidate who receives more than 75% of the score), and these tests are just to sort out his curriculum vitae, the machine learning algorithm. Otherwise it is irreversible, and will not be graded, and you are ranked, as well as is not going to be able to see the results.

**c) Candidate Skillset Database**

This block which combines a graphical interface with a database, which means that it acts

as a point of contact, as well as a dealer, to connect to databases, it allows you to transfer data between the GUI and the database. Its main function is to collect data for an individual candidate's resume and to analyze them in order to store information and store it in a structured format (json), and a database. the system will give you results through the use of web-applications. The database is used to store the data. This level contains all the data that is need in order to process the duration of the project.

#### d) Resume Ranking algorithm:

TF-IDF is a statistical measure that estimates the relevance of a word document in a document collection. This is done by multiplying the two values: the number of times a word appears in a document, and is the inverse of the document frequency of a word document. It has many applications, in particular, the automated analysis of the text, and are very useful in the word count of machine learning algorithms in order to deal with natural language processing (NLP).The TF-IDF (term frequency is the inverse of the document frequency), was a document search and retrieval. It is in relation to the number of times a word occurs in a document is, however, that the consideration of documents that contains the term. So, the word that is common to all of the documents and, if the rank is low, even if they seem to be a lot of times, because they are a great value for a certain amount of action in the case.

#### e) Information retrieval:

TF-IDF was invented for document search and may be wont to deliver results that are most relevant to what you're checking out . Imagine you've got an enquiry engine and somebody looks for LeBron. The results are going to be displayed so as of relevance. That's to mention the foremost relevant sports articles are going to be ranked higher because TF-IDF gives the word LeBron a better score. It's likely that each program you've got ever encountered uses TF-IDF scores in its algorithm.

#### Keyword Extraction

TF-IDF is also useful for extracting keywords from text. How? The highest scoring words of a document are the most relevant to that document, and therefore they can be considered keywords for that document. Pretty straightforward.

### V. DISADVANTAGES OF EXISTING SYSTEM

- 1.Require manpower
- 2.Slow due to manual work

- 3.Inefficient due to lack of computer technologies
- 4.Require plenty of time
- 5.Costly as dedicated people are to be assigned for this work.

### VI. ADVANTAGES OF PROPOSED SYSTEM

1. No need for human work all work is done by computer.
2. Faster than manual work.
3. Efficient thanks to machine learning.
4. Require less time.
5. Cheap as we don't need extra people in the human resource department for resumes short-listing.

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### VIII. CONCLUSIONS

In this project, we've implemented a company-oriented recruitment system which will assist the human resource department in shortlisting suitable candidates for a specific job profile. The system would be utilized in many business sectors that need expert employees, thus reducing the workload on the human resource department. Our system will provide a far better and efficient solution to the present hiring process. this will provide the potential candidate to the organization and thus the candidate are going to be successfully be placed in a company that values his/her skillset and skill .

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