Resume Screening and Analysis

N. MARINBI[1], N. HIMA SAI[2], A. AJAY[3], K. MANASA[4], D. SRAVANI[5]
[1, 2, 3, 4, 5] *Department of CSE-Data Science, SRK Institute of Technology, Vijayawada, A.P., India.*

Abstract— Hiring the right talent is a challenge for all businesses. This challenge is magnified by the high volume of applicants if the business is labour-intensive, growing, and facing high attrition rates. companies often receive thousands of resumes for each job posting and employ dedicated screening officers to screen qualified candidates. The main aim of the resume screening is "task of selecting the best talent among many others is known as Resume Screening". The complex endeavour of selecting the most suitable talent from a vast pool of applicants Therefore, standardized automated screening methods categorize qualified from unqualified candidates based on their background, education and professional experience faster, with more efficiency and more accurate results to streamline hiring processes. Artificial intelligence, along with text mining and natural language processing algorithms, can be applied for the development of programs capable of screening objectively thousands of resumes in few minutes without bias to identify the best fit for a job opening based on thresholds, specific criteria or scores. Typically, large companies do not have enough time to open each CV, so they use machine learning algorithms for the Resume Screening.These research' experimental findings show that the suggested strategies are more effective than conventional ones. The results of this study can help human resource managers and recruiters automate the hiring process and efficiently and impartially identify viable applicants

I. INTRODUCTION

1.1 Overview:

A typical job posting on the Internet receives a massive number of applications within a short window of time. Manually filtering out the resumes is not practically possible as it takes a lot of time and incurs huge costs that the hiring companies cannot afford to bear. In addition, this process of screening resumes is not fair as many suitable profiles don't get enough consideration which they deserve. This may result in missing out on the right candidates or selection of unsuitable applicants for the job. In this paper, we describe a solution that aims to solve these issues by automatically suggesting the most appropriate candidates according to the given job description. Our system uses Natural Language Processing to extract relevant information like skills, education, experience, etc. from the unstructured resumes and hence creates a summarised form of each application. With all the irrelevant information removed, the task of screening is simplified and recruiters are able to better analyse each resume in less time. After this text mining process is completed ,the proposed solution employs a vectorisation model and uses cosine similarity to match each resume with the job description. The calculated ranking scores can then be utilized to determine best-fitting candidates for that particular job opening.

1.2ABOUT THE PROJECT

Resume screening is a method for quickly and efficiently reviewing resumes that candidates submit for a position. Screening resumes doesn't involve reading each resume carefully, but instead consists of looking for certain desired criteria in each of the resumes. This allows recruiters to separate those candidates who don't possess the desired qualifications from those who do. After doing this, recruiters can then spend more time considering the applications from candidates who have the criteria they want.

1.3 Purpose:

- Separating the right candidates from the pack.
- Making sense of candidate CVs
- Filtering the candidates based on their performance.

1.4 Scope:

Continued research and innovation in this field will lead to further advancements and opportunities for optimizing resume in the future.

II. LITERATURE SURVEY

[1] Pradeep Kumar Roy [2018] Machine Learning approach for automation Resume Recommendation System Choosing the best candidates from the pool here to perform these types of tasks different NLP techniques such as bigram trigram and n gram and text classification are used, this model used Machine Learning to perform the classification using the algorithm [1]

[2] Thimma Reddy Kalva [2019] Skill Finder: Automated Job-Resume Matching System API for web services [9]. This information is then utilized to score the students' resumes based on the skills required for the job, using Named Entity Recognition (NER) software such as Apache OpenNLP [10] and Stanford Name Entity Recognizer.

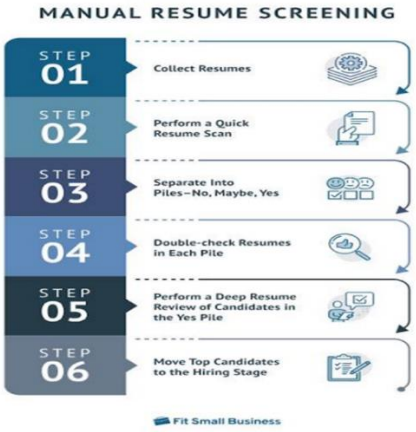
[3] Yong Luo [2020] Resume NET: A Learning-based Framework for Automatic Resume Journal of Engineering Science Quality Assessment [10] produced a custom dataset of out of is categorized in two categories: positive and negative, with 33 and 89 resumes identified as positive and negative, respectively

[4] Sujit Amin[2017] Web Application for Screening Resume The goal was to create a web application for resume screening using 220 resumes, 200 of which were utilized for training and 20 for testing, and the web application was separated into three sections. • Job Applicant side • Server-Side • Recruiter Side The applicant will supply his or her résumé on the applicant side, which will be processed on the server side and then trained using the NLP Pipeline, which uses SpaCy, an NLP framework [6]. On the recruiter's side, the resume rank list will be displayed, which was determined using a score calculator, so that the recruiter may choose the best candidate for the job.

[5] Design and Development of Machine Learning based Resume Ranking System The system proposes a technique in which the candidate submits his or her resume following an interview here the face-based technique was used. After the resume is submitted, NLP techniques are used to extract the necessary abilities from the resume, then TF- IDF vectorization is used to transform the words into vectors so the machine can interpret them. The KNN algorithm [5] is used to identify the resume that most closely fits the JD provided by the recruiter. The system has a parsing accuracy of 85 percent on average [4]

III. EXISTING SYSTEM

Manually screening a large number of resumes takes at least one day. If a recruiter considers 4-6 appropriate resumes when going through the initial resumes, chances are that they will not consider the other submitted resumes.This decreases the likelihood of a successful resume being shortlisted. Going through each resume is time-consuming, and manually organizing and managing a large number of resumes is challenging. It's normal to have some prejudice, wherever there's been human involvement. Currently, there is no such technology available that would benefit the students which can help them strengthen theirresume.



By using the manual resume screening it takes the lot of time to shortlist the students. And we some resume screening techniques but we face some problems by using the MLP and SVM techniques. we cannot classify the many resumes at a time.

Disadvantages:

- No clear classification in the existing systems
- Some systems found problems with the usage of algorithms.
- Resumes need to be in specific format.
- Unable to classify the no. of resume at a time.
- Low accuracy in the resume screening.

IV. PROPOSED SYSTEM

Once the resumes are uploaded by the company in our web interface, they will be stored in our database. Then, from the database, our system retrieves the uploaded resume and starts with the text extraction process. And later the extracted text is tokenized into individual keywords. Our system extracts the necessary information such as experience, skills, education present in the resume by using certain Natural Language Processing (NLP) techniques. The extracted information is used to train the machine learning models. The trained model is used to predict whether the particular candidate is suitable for the role or not. If he/she is not qualified, then the overcome the issue of submitting a specific file format of resume, which exists system will recommend others.

Advantages:

- Our problem will overcome the specific file formate of resume
- It takes less time to hire students based on their profile.
- Usage of algorithms is less
- Students easily know that they are eligible of job or not by resume screening.
- Usage of human labour is less for companies.

CONCLUSION

By this project we can know that the how many job roles are present in that company and we can get the job based on our skills like HR, Manager, Data analysist, etc…. and we can know the how many vacancies are present in that company.

This paper examines a variety of machine learning model such as KNN, NLP to detect, identify, and categories diverse resumes. And here we achieve the better accuracy and we implement a web interface to screen the resumes and analyses the type of job related to resume.

FUTURE SCOPE

The future scope of resume screening With advancements in natural language processing (NLP) and machine learning algorithms, companies can efficiently filter through large volumes of resumes to identify the most qualified candidates. Additionally, incorporating AI-driven tools can help mitigate biases in the hiring process, leading to more diverse and inclusive workforce selections. As technology continues to evolve, the accuracy and efficiency of resume screening using data science will only improve, making it an integral part of talent acquisition strategies for organizations.

REFERENCES

[1] Pradeep Kumar Roy, Vellore Institute of Technology, 2019. A Machine learning approach for automation of resume recommendation system, ICCIDS 2019. 10.1016/j.procs.2020.03.284.

[2] Thimma Reddy Kalva, Utah State University, 2013. Skill-Finder: Automated Job-Resume.

[3] Based Framework for automatic resume quality Suhjit Amin, Fr.Conceicao Rodrigues Institute of Technology, 2019. Web Application for Screening resume, IEEE DOI:

[4] Ashwini K, Umadevi V, Shashank M Kadiwal, Revanna, Design and Development of e Learning based Resume Ranking

[5] Riza tana Fareed, rajah V, and Sharadadevi kaganumat “Resume Classification and Ranking using KNN and Cosine Similarity” In 2021 International Journal of Engineering

[6] Sujit Amin, Nikita Jayakar, Sonia Sunny, Pheba Babu, M. Kiruthika, Ambarish Gurjar, Web Application for Screening Resume, 2019 International Conference on Nascent Technologies in Engineering (.

[7] Suhas HE, Manjunath AE, “Differential Hiring using Combination of NER and Word Embedding”, In 2020 International Journal of Recent Technology and Engineering (IJRTE),

[8] Centre for Monitoring Indian Economy Pvt Ltd. (CMIE),2022. The unemployment rate in India.