A synopsis submitted for the

Project

IV Year

B.Tech (CBSE)

(Computer Science and Engineering- Data Science)

Of

Board of Studies in CSE-DS Faculty of Science & Technology

Rashtrasant Tukadoji Maharaj Nagpur University

Nagpur

TITLE: SMART RESUME ANALYZER

PROJECTEE: Mr. Shreyash Ghogare

Mr. Yash Wanjari

Mr. Gaurav Sontakke

Mr. Yash Dhomne

Mr. Parimal Yawalkar

GUIDE: Dr. Dhiraj Karwatkar

Department of Data Science

U.G. Program – B.Tech. Computer Science & Engineering-Data Science

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SYNOPSIS

SMART RESUME ANALYZER

1.INTRODUCTION

The Smart Resume Analyzer is a cutting-edge project designed to revolutionize the job recruitment process by automating the initial screening of resumes. Utilizing advanced Natural Language Processing (NLP) and Machine Learning (ML) techniques, this system efficiently extracts and analyzes key information from candidates' resumes, such as work experience, education, skills, and achievements.

The primary goal of the Smart Resume Analyzer is to streamline the recruitment process for both employers and job seekers. For employers, it significantly reduces the time and effort required to sift through numerous resumes, ensuring that only the most qualified candidates are shortlisted. For job seekers, it provides personalized feedback and recommendations to enhance their resumes, thereby increasing their chances of securing a job.

Key features of the Smart Resume Analyzer include resume parsing, which extracts essential details; skill recommendation, which predicts relevant skills for specific job roles; and course suggestions, which recommend online courses to bridge skill gaps. The user-friendly interface allows candidates to upload their resumes and receive instant, detailed analysis and recommendations. By automating resume screening, the Smart Resume Analyzer not only saves time but also enhances the accuracy and fairness of the recruitment process.

The chore of manually sorting through thousands of resumes to find the best candidates for the position is incredibly challenging for recruiters. Although the methods employed by job websites have produced some accuracy and precision, one of the main drawbacks is the intricacy of the time component. The time complexity for getting the results is very significant if every candidate resume is compared to every other job posting provided on the online recruitment site.

2. LITERATURE SURVEY

1. Author: **Dr. Sandeep Tayal, Shivansh Singhal, Taniya Sharma**
YEAR :- **2024**
In this research, the study aims to address the inefficiencies and subjectivity of traditional resume screening methods by proposing an automated system. The authors employ NLP techniques such as named entity recognition and part-of-speech tagging, along with ML classifiers like K-Nearest Neighbors (KNN) and Support Vector Machines (SVM). The proposed system enhances the precision of candidate selection, significantly reducing the time and effort required for resume screening. This research highlights the potential of ML and NLP in transforming the recruitment process, making it more efficient and objective.

2. Author: **Asmita Deshmukh, Anjali Raut**
YEAR :- **2024**
In this study, the study aims to enhance the efficiency and accuracy of resume screening by leveraging BERT-based NLP techniques. The application of BERT significantly improved the efficiency and accuracy of resume screening, reducing manual effort and time, and providing valuable insights for HR decision-making.This research underscores the transformative potential of BERT in revolutionizing recruitment processes by making them more scalable and precise.

3. Author: **Patlolla Sruthi1, P.N.V.K.G. Adithya, MD. Suleman, Pallerla Kunal, Surya Prakash**
YEAR :- **2023**
The study aims to create a system that can intelligently analyze resumes, identify key skills and qualifications, and suggest the best-suited job titles for candidates. This system helps job seekers optimize their resumes, making them more appealing to potential employers and improving their chances in the competitive job market. This research highlights the effectiveness of using RNN and NLP technologies to automate and enhance the resume screening process, providing valuable insights and recommendations to job seekers.

4. Author: **Ms. Y. Sowjanya, Mareddy Keerthana, Pulluri Suneeksha, Dorgipati Sai Sri Harsha**
YEAR :- **2023**
The study aims to create a robust and efficient system for resume screening that can accurately match and rank candidates' resumes in real-time. According to experimental findings, the system achieves a text parsing accuracy of 85% and a ranking accuracy of 92%. This research highlights the potential of using advanced NLP techniques to improve the efficiency and accuracy of the resume screening process, making it more scalable and effective for large-scale applications

3. OBJECTIVES

1. **Automated Resume Parsing**: Develop an algorithm capable of automatically parsing resumes to extract key information such as contact details, education, work experience, skills, certifications, and other relevant sections.
2. **Job Description Matching**: Create a matching system that compares the extracted resume data with job descriptions to evaluate the compatibility between a candidate's qualifications and the job requirements.
3. **Skill and Experience Analysis**: Implement a module to analyze the skills and experience listed in the resume, identifying strengths and gaps relative to the job market demands.
4. **User-Friendly Interface**: Build an intuitive and user-friendly interface for both recruiters and job seekers, ensuring easy navigation and interaction with the system. Allow users to upload resumes and receive instant analysis and feedback.
5. **Data Privacy and Security**: Ensure that the system complies with data privacy regulations by securing user data and maintaining confidentiality.
6. **Performance Metrics**: Develop performance metrics to evaluate the efficiency and effectiveness of the resume analyzer, such as accuracy of resume parsing, matching success rate, and user satisfaction.
7. **Scalability**: Design the system to be scalable, capable of handling a large volume of resumes and job descriptions without compromising performance. Ensure that the system can be easily updated with new algorithms or modules as technology and market needs evolve.

4. PROBLEM STATEMENT

A Smart Resume Analyzer can significantly enhance the recruitment process by addressing several key challenges. Firstly, it streamlines resume screening by quickly identifying and ranking the most relevant resumes based on job descriptions. This automated process ensures that only the most suitable candidates are considered, saving recruiters valuable time and effort.

Additionally, the analyzer can classify resumes into different job roles or industries, making it easier for recruiters to filter candidates according to specific criteria. This categorization helps in organizing the recruitment process and ensures that candidates are matched to the roles that best fit their skills and experience.

Skill matching is another critical function of the Smart Resume Analyzer. By comparing the skills listed in resumes with those required for the job, the analyzer ensures that candidates with the most relevant skills are prioritized. This not only improves the quality of hires but also reduces the likelihood of mismatches between candidates and job requirements. Time efficiency is a significant advantage of using a Smart Resume Analyzer. It drastically reduces the time needed for manual resume reviews, allowing recruiters to focus on more critical tasks such as interviewing and candidate engagement. This efficiency leads to a faster hiring process and better resource allocation.

Finally, the accuracy of resume screening is greatly enhanced through the use of machine learning techniques. The analyzer continuously learns and improves its screening process, ensuring that the best candidates are not overlooked. This leads to more accurate and reliable hiring decisions, ultimately benefiting both the employer and the candidates.

5. REFERENCES

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