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AI RESUME CREATOR AND ANALYZER

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Abstract: The project is a platform named AI Resume Creator and Analyzer that can create and analyze resumes while providing resume scores. The first section is a Resume Builder where users can create professional resumes using templates by filling in their information, and a live preview is displayed on the right side. Users can customize the template and download the resume directly from the preview section. The second and main section is the Resume Analyzer, which includes two features. In the single analyzer, candidates can upload their resume, select a role, and analyze it to receive extracted details such as name, email, phone number, matched and mismatched skills, improvement suggestions, ATS score, resume health, job fitness, and experience review. The second feature is designed for HR, where multiple resumes (50–60 at a time) can be uploaded and analyzed based on the selected role. The system generates a ranked table including rank, name, email, ATS score, health score, job fitness, and status categorized as selected, review, or rejected. This platform helps users improve their resumes and enables HR to quickly identify suitable candidates.

Index Terms - Resume Creator, Normal Analyzer, Hr-Analyzer, Result Table & History.

I. INTRODUCTION

The AI Resume Creator and Analyzer is a platform where users can create their resumes very easily. We provide a form-based system in which users can enter their details and select templates according to their preference. The information includes name, email, phone number, photo, education, experience, and projects. The system arranges all the details in a properly formatted structure and generates a neat and professional resume. When the user clicks on generate resume, the resume is created in PDF format, and the output is exactly the same as shown in the preview section.

The second option of the platform is the Resume Analyzer, which is useful for both HRs and normal users. In the analyzer section, we provide two main options. The first option is the Single Resume Analyzer. In this feature, users can upload their resume in PDF or DOC format. After clicking the analyze button, the system analyzes the resume and extracts essential information such as name, email, phone number, matched skills, and mismatched skills. The skills are analyzed according to the selected job role. For example, if the selected role is Java Developer, the required skills may include Java, Advanced Java, Spring, SQL, and API. The system checks how many required skills are present in the resume and provides matched and missing skills accordingly. It also provides improvement suggestions such as adding education details properly, including more projects, adding experience or internships, and improving the resume structure. In addition, the system generates ATS score, resume health score, job fitness score, and experience review based on the resume content.

The second main feature in the analyzer section is the HR Bulk Resume Analyzer. In this feature, HRs can upload 50 to 60 resumes at one time and analyze them according to a selected role. The output is presented in the form of a table that includes columns such as rank, name, email, ATS score, health score, job fitness, and status. The status column shows whether the candidate is auto-selected, under review, or rejected based on the ATS score and other parameters. HRs can click on any row in the table to view the resume and access its single analyzer report on the next page. We also provide a history option so that both HRs and users can view their previous analysis records properly.

II. LITERATURE STYLE REVIEW

Paper 1: D. Celik, et al., 2019 – “Towards an Information Extraction System Based on Ontology to Match Resumes and Jobs”

A system that helps match candidates to jobs using ontology-based information extraction. Users' resumes are analyzed and compared to job requirements to find the best fit. The system improves matching accuracy using structured semantic data while keeping the process automated and efficient.

Paper 2: F. Javed, et al., 2018 – “Carotene: A Job Title Classification System for Online Recruitment Domain”

Carotene is a system that classifies job titles for online recruitment platforms. It standardizes the naming of roles and helps automatically match candidates to relevant positions. The focus is on improving accuracy and reducing manual errors in recruitment databases.

Paper 3: S. Sharma, et al., 2020 – “Automated Resume Parsing and Analysis Using Natural Language Processing”

This research develops a resume parser using natural language processing techniques. It extracts information such as skills, education, and experience. The system helps recruiters quickly evaluate resumes and identify suitable candidates.

Paper 4: T. Patel, et al., 2019 – “Online Resume Builder Using Python and MySQL”

An online platform that allows users to create resumes by entering personal and professional details. Users can select templates and download structured resumes. The system focuses on simplicity and usability, enabling quick resume generation.

Paper 5: N. Kumar, et al., 2019 – “A Review on Resume Matching and Job Recommendation System”

A review of existing methods for resume-job matching and recommendation systems. The study summarizes techniques to improve recruitment efficiency and reduce manual screening. It emphasizes automated approaches for better candidate selection.

Paper 6: J. Brownlee, 2020 – “Machine Learning for Text and Resume Analysis”

This study explores machine learning methods for analyzing resumes and other text data. It identifies skills and experience patterns to rank candidates for specific roles. The approach helps make candidate evaluation faster and more objective.

III. PROPOSED SYSTEM

The proposed platform, AI Resume Creator and Analyzer, is designed to assist students and fresh candidates in creating professional resumes efficiently, as well as help HR professionals analyze multiple resumes quickly. The system is implemented using HTML, CSS, JavaScript, and Python, with the Flask framework for the backend and MySQL as the database. The platform includes several modules: Resume Creator, Single Resume Analyzer, HR Analyzer, Result Table, and History. For security, user passwords are stored using hashing techniques. The interface is interactive and user-friendly, allowing easy navigation for all users.

The system consists of four main modules: Resume Creator, Single Resume Analyzer, HR Analyzer, and Result Table with History. The Resume Creator enables users to build professional resumes by entering personal and academic details and selecting from standard templates. It provides a live preview feature and allows users to generate the final resume in PDF format. The Single Resume Analyzer allows users to upload a resume and receive an evaluation based on selected job roles, including overall score, skill matching, and improvement suggestions.

The HR Analyzer supports bulk resume screening by ranking candidates based on evaluation criteria and presenting results in a structured table format. HR users can review detailed information for each candidate to assist in decision-making. The Result Table and History modules maintain records of generated resumes and analysis reports, ensuring organized storage and easy access to previous data. Overall, these modules work together to simplify resume creation and streamline the recruitment process.

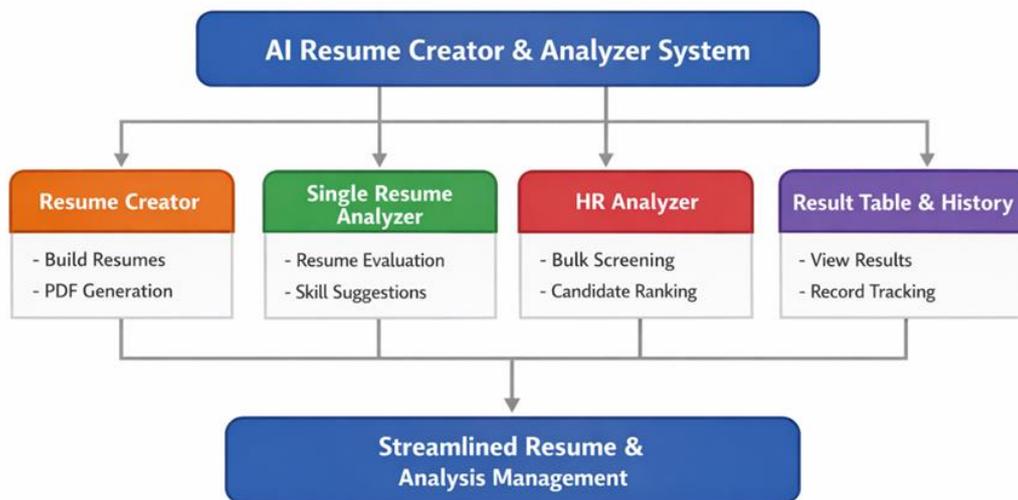


Fig 1: Block Diagram of AI Resume Creator & Analyzer System

IV. RESULT AND APPLICATION

1. Result:

The results of the AI Resume Creator and Analyzer platform are very encouraging. The system provides a single platform where users can both create and analyze resumes efficiently. The platform includes a dedicated HR Analyzer module that helps HR professionals manage the large number of resumes they receive for various job roles. Instead of opening each resume individually, HRs can upload multiple resumes at once and obtain a ranked output based on ATS scores, job fitness, and other metrics, saving time and effort.

For students and fresh candidates, the system provides professional resume creation with standard, well-formatted templates. The Single Resume Analyzer evaluates resumes, identifies areas for improvement, and provides suggestions to enhance the resume, ensuring that candidates can make their resumes more impactful and suitable for job applications. Overall, the platform effectively combines resume creation, analysis, and ranking in one system, making it highly practical and useful.

2. Application:

The AI Resume Creator and Analyzer has significant applications in the real world for both HR professionals and job seekers:

1. For HR Professionals:

HRs can upload multiple resumes and get a detailed analysis in the form of a ranked result table. Using this output, they can select candidates quickly and efficiently. The system supports manual adjustments, skill verification, and candidate evaluation, making the recruitment process faster, more accurate, and less labor-intensive.

2. For Candidates (Students and Freshers):

Users can create professional resumes using the platform's templates and form-based input. The Single Resume Analyzer provides feedback and suggestions to improve the resume, ensuring it is well-formatted, detailed, and impactful. This improves candidates' chances of impressing HR professionals during job applications.

The platform can therefore be applied in two main ways: as a desktop tool for HRs to manage bulk resumes and as a candidate-facing tool for resume creation and analysis. Its dual functionality makes it a practical solution for both recruitment and job-seeking scenarios in real-world applications.

V. CONCLUSION AND FUTURE SCOPE

1. Conclusion:

In this project, we have successfully developed the AI Resume Creator and Analyzer platform, designed to assist both students/freshers and HR professionals. The platform allows users to create professional resumes quickly using standard industry-level templates and provides an analyzer to evaluate them effectively. The Single Resume Analyzer helps candidates understand their resume health, ATS score, job fitness, and areas for improvement, enabling them to enhance their resumes. The HR Analyzer allows HR professionals to upload multiple resumes simultaneously, analyze them efficiently, and identify the most suitable candidates based on ranking and evaluation metrics. Overall, the platform provides a fast, reliable, and user-friendly solution, streamlining resume creation, evaluation, and candidate selection for both individuals and HR departments.

2. Future Scope:

The AI Resume Creator and Analyzer platform has significant potential for further enhancement using advanced AI technologies. In the future, the system can integrate NLP techniques to improve skill extraction and keyword matching, and incorporate Large Language Models (LLMs) to make resume creation and analysis fully intelligent, reducing the need for manual input. A chatbot-based interface could be developed to guide users interactively through resume creation and evaluation. For HR applications, the analyzer can be enhanced to auto-select candidates, generate detailed candidate profiles, suggest personalized interview questions, and even automate interview call emails. Additionally, the platform could be developed as a desktop application for HR professionals to upload and manage resumes more efficiently, with integration to email systems like Gmail for easier communication. For candidates, a fully AI-driven system could allow automatic resume creation and analysis, offering smart suggestions to improve their resumes and making the platform more interactive and user-friendly. These enhancements will make the system more intelligent, automated, and practical, providing a comprehensive solution for both recruitment and job-seeking in real-world scenarios.

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