



Automated Resume Analyzer For Job Recommendation System

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Abstract: Manual screening is time-consuming and ineffective because recruitment procedures frequently require evaluating a large number of resumes. The Automated Resume Analyzer for Job Recommendations, a system intended to streamline and expedite the hiring process, is presented in this paper as a solution to this problem. Important data, including personal information, education, experience, and skills, is automatically extracted from candidate resumes by the proposed system.

In order to provide the candidate with appropriate job recommendations, the extracted data is subsequently examined and compared with open positions. Users can upload digital resumes to the system, which then parses and organizes pertinent information in a structured format. The system highlights missing skills that might be necessary for particular roles and recommends suitable job opportunities based on the identified skills and qualifications. This method offers candidates better job guidance and increases the effectiveness of resume screening. Standard web technologies and database support are used in the system's implementation to guarantee accessibility and usability. The suggested approach shows how automated resume analysis can enhance candidate-job matching and support hiring procedures.

I.KEYWORDS-

The following keywords represent the main concepts and technologies used in the proposed system.

1. Resume Parsing
2. Job Recommendation System
3. Recruitment Automation
4. Candidate Skill Extraction
5. Resume Comparison

II.BACKGROUND INFORMATION-

The hiring process has moved more and more to digital platforms in recent years, where businesses receive a lot of resumes for a single position. Recruiters find it difficult and time-consuming to manually review these resumes.

Automated systems that can effectively analyze and arrange resume data are therefore becoming more and more necessary. Resume parsing systems assist in extracting crucial data from resumes and organizing it into a structured format, including personal information, education, experience, and skills. Recruiters will find it simpler to assess applicants and match them with appropriate positions as a result. Additionally, job recommendation systems help applicants by recommending positions that fit their qualifications and skill set. By enabling the system to assess several resumes and determine which applicants are best suited for a specific position, features like resume comparison enhance the hiring process even more. As a result, automated resume analysis systems are crucial for increasing hiring effectiveness and decision-making.

III.LITERATURE SURVEY-

Researchers have done a number of studies to find ways to make the hiring process more efficient by using automated systems. Recruiters have to go through a lot of resumes by hand when they use traditional hiring methods. This takes a lot of time and can lead to mistakes or missing qualified candidates. Researchers have come up with systems that automatically pull out and analyze information from resumes to solve this problem.

There are a lot of resume parsing systems that can pull out important information from resumes, like personal information, educational qualifications, technical skills, and work experience. These systems turn unstructured resume data into structured formats, which makes it easier for recruiters to look at candidate profiles. Also, some job search sites have job recommendation features that suggest good job roles based on the skills and qualifications of the candidates. Earlier studies have also shown how important automated resume screening and candidate matching systems are in today's hiring processes. These kinds of systems help recruiters find the best candidates by making their jobs easier, more efficient, and less time-consuming. The proposed system is based on these ideas and focuses on automated resume analysis, job recommendations, and resume comparisons to help both job seekers and recruiters find the right candidates.

IV.PROBLEM STATEMENT-

When companies are hiring these days, they get a lot of resumes for open positions. Recruiters have to spend a lot of time and energy going through and analyzing these resumes by hand, which can slow down the hiring process. Also, manual screening can cause mistakes, inconsistencies, and the chance of missing out on qualified candidates. Candidates also have a hard time finding job openings that fit their skills and experience.

So, there needs to be an automated system that can quickly look at resumes, pick out useful information, and suggest jobs that would be a good fit. The system should also be able to compare several resumes to help find the best person for a certain job. This system can help make the hiring process faster, more accurate, and more efficient.

V.OBJECTIVE-

Automated Resume Analyzer for Job Recommendations system general objectives include:

1. Creating an automatic means of collecting key data from candidate resumes to populate their profiles with this information
2. Analyzing uploaded resume and extracting skills, education and experience from these documents.
3. Recommending available job options based upon applicable skill(s) and educational/industry qualification match between applicant(s) and their desired position.
4. Allowing comparison of resumes by more than one individual so that all applicants can be evaluated.
5. Improves both efficiency and accuracy when matching candidates to appropriate positions in the recruitment process.

VI.METHODOLOGY-

The Automated Resume Analyzer for Job Recommendations is a proposed system that will automate the process of looking at resumes and suggesting jobs that would be a good fit for them. There are several steps in the system's methodology that process the resume data and make job recommendations.

1. Resume Upload: Users can upload their resumes in digital formats like PDF or DOCX through the system's web-based interface.
2. Resume Parsing: The system takes out important information from the resume that was uploaded, like personal information, education, skills, and work history. After that, the gathered information is put into a structured format.
3. Data Analysis: The resume data that was taken out is looked at to find out what skills and qualifications the candidate has. The database keeps this information so it can be used later.
4. Job Recommendation: The system looks at the candidate's skills and qualifications and compares them to available job roles. It then suggests job opportunities that are a good fit.
5. Comparing Resumes: The system also has a resume comparison feature that lets you look at and compare several resumes to see which candidate is best for a certain job.

6. **Result Generation:** The system finally shows the user the analyzed resume details, job recommendations, and comparison results through the interface. This method helps automate the process of getting help with hiring by quickly analyzing resumes and giving good job suggestions.

VII.SYSTEM ARCHITECTURE-

The Automated Resume Analyzer system has an architecture consisting of multiple modules working together to analyze resumes and recommend jobs. The system is designed to automate the resume evaluation process to assist both job seekers and recruiters.

1. **User Interface Module:** This module provides users with the ability to interact with the system using a web-based interface. Users can upload their resumes and receive analysis results, job recommendations and results of comparisons between their resumes and the qualifications of available jobs.

2. **Resume Upload Module:** Users can upload their resumes (in digital file formats such as PDF or Word) for processing by the Resume Analyzer. This module accepts the uploaded resume and prepares it to be processed.

3. **Resume Parsing Module:** The Resume Parsing Module extracts key data (such as personal details, education, skills and work experience) from the uploaded resume. The extracted data is converted into a structured format so it can be analyzed more easily.

4. **Data Storage Module:** The structured information extracted from a resume is stored in the system's database. All candidate data will be managed and used for additional comparison with and analysis against other candidates' qualifications in the future.

5. **Job Recommendation Module:** This module evaluates the qualifications and skills in the candidate's resume against job roles available in the system's job database. Based on this evaluation, the system will recommend suitable job opportunities for the candidate to choose from.

6. **Resume Comparison Module:** Also included in the system is a provision for comparing and analysing multiple resumes. This will allow for identifying who would be the best fit for a particular job.

7. **Result Display Module:** At the completion of the comparative analysis, all the results (resume information, job recommendations, and comparative analysis results) will be made available to the user via the user interface.

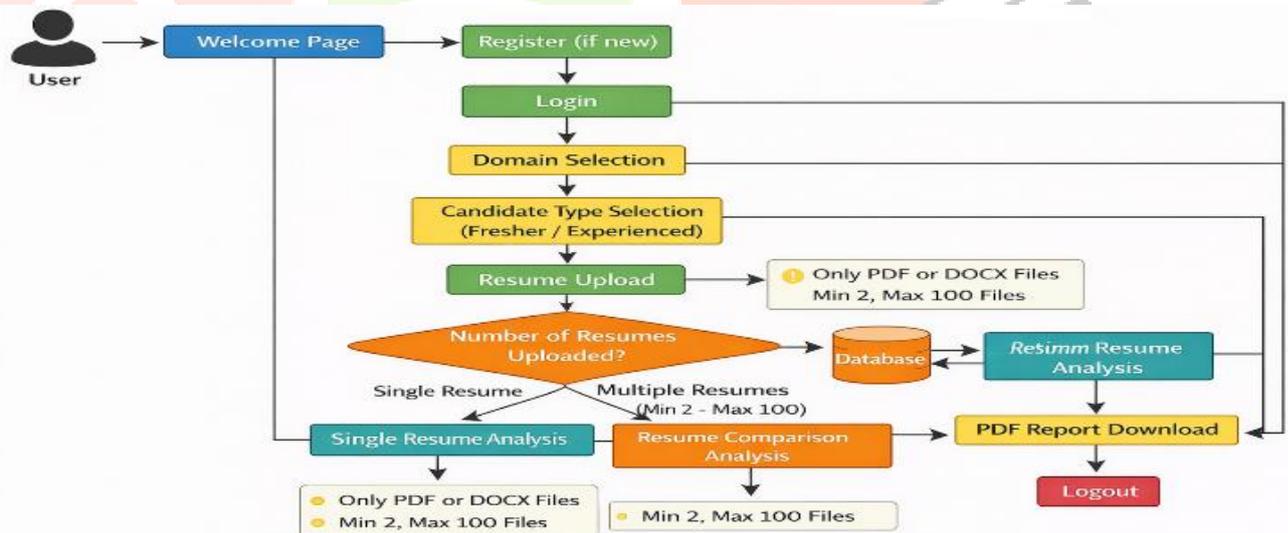


Fig. 1. System architecture of the proposed system

7.1 Explanation of the System Architecture diagram:

The diagram of the architectural system illustrates how the Automated Resume Analyzer for Job Recommendations functions. To utilise the system, the user has to access the system through the welcome page. If the user is using the system for the first time, they will need to go through the registration process to create an account before they can then log into the system once they have successfully registered using their username and password.

Once the user has logged into the system, they will select the job domain that they wish to apply for and the type of candidate they are, either a fresher or an experienced candidate. They will then upload the resume file for analysis once they have chosen the job type and the type of candidate.

The system will only process resumes in a PDF or DOCX format; therefore, it does not accept receipts in unsupported formats such as images.

The system will check if there is one resume or multiple resumes uploaded. If one resume is uploaded, the system will perform a single analysis of the resume and then generate a report based on the user's resume and candidate's information. If multiple resumes are uploaded, the user will be permitted to submit and compare at least 2 resumes and a maximum of 100 resumes for a report to be generated on the overall multiple resumes submitted.

Users receive results and feedback upon completion of the analysis via the system. The user is able to retrieve a PDF formatted report that contains the results and feedback as well. The security of the system allows users to log out at this time.

This architecture establishes an organized and efficient process for resume analysis, job recommendation, and resume comparison.

VIII.RESULT AND DISCUSSION-

The Automated Resume Analyzer for Job Recommendations system has been designed in order to streamline the process of review resumes and match jobs using resumes with the new technology of evaluating resumes using automation. The user will be able to upload their resume in a digital file, and the software will analyze their resume and pull out important information about them such as their name, date of birth, education, and career experience.

Results of the study show that the system can organize the resume data from a resume into a structured form to allow recruiters to analyze the candidate's information much easier than if they were to analyze all of the resume data in an unorganized manner. The system generates job recommendations based on the skills and education acquired by the candidates in their resume. The resume comparison feature of the system provides recruiters with a way to compare multiple resumes for one job position with multiple qualified candidates.

The implementation of this system demonstrates the ability to automate the process of reviewing resumes and cut down on the time it takes to review resumes manually. It also enables recruiters to quickly identify qualified applicants for position openings and assists job seekers to find qualified jobs. Overall, this system will provide an effective method for improving the process of evaluating resumes to generate job recommendations.

8.1 Simulation Result-

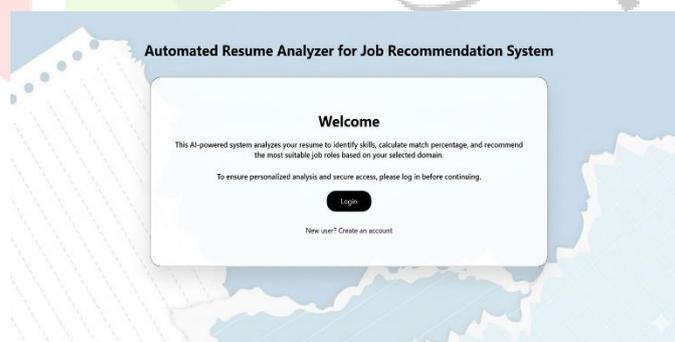


Fig. 2. Welcome Page

This image shows the landing page for an Automated Resume Analyzer for Job Recommendation System, a professional web application that simplifies the hiring process. The interface is clean and modern, with a light blue background and stylized, torn-paper textures. A central white card welcomes users and explains that the AI-powered system identifies skills, calculates job match percentages, and suggests appropriate roles based on a user's specific domain. To provide a personalized and secure experience, the page asks users to either log in with a prominent black button or create an account if they are new to the platform.

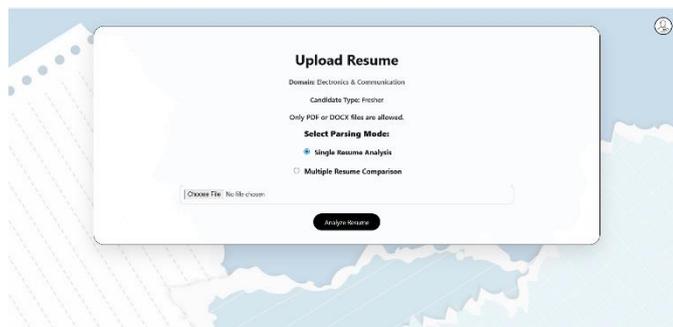


Fig. 3.Upload Page

On this page (Upload Resume), there is an interface that maintains continuity with the other (landing) pages and uses light blue and paper as the primary design elements. In the center of the page (interface), a user who is new to the workforce, in the field of Electronics and Communications, can upload their resumes. The page states that only PDF or DOCX resumes will be accepted. Additionally, two types of resume parsing are available: single resume analysis and multiple resume comparison. Users can select the file they want to upload by using the standard "Choose File" input. After they have selected their resume file, they can click the large black "Analyze Resume" button located at the bottom of the page to proceed with the analysis process.

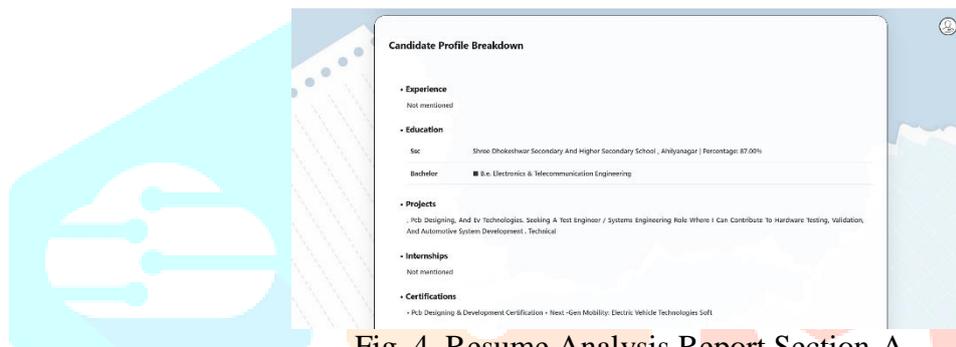


Fig. 4. Resume Analysis Report Section-A

The Candidate Profile Breakdown report outlines how the individual has been profiled based on a parsed resume outlining an Electronics & Telecommunications Engineering background. This individual's analysis indicates that although there is no formal experience in an employment capacity or internship experience, the Candidate has significant academic credentials that include a Bachelors Degree and an impressive score of 87% through all levels of education. The primary focus of the technical skill set acquired is on PCB Design and Electric Vehicle Technologies through certifications and project work completed. The conclusion drawn from this report is that the individual is actively pursuing a Test Engineering or Systems Engineering position where they can utilize their technical skill set relating to hardware testing, validation, and automotive system development.

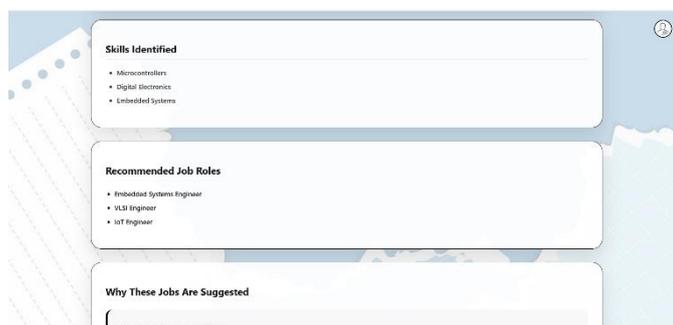


Fig. 5. Resume Analysis Report Section-B

The Skills Analysis and Job Recommendations section of the report offers insight into how the candidate's skills could transfer into a career path. Based on parsing of their resume, the candidate has demonstrated a strong foundation of skills in Microcontrollers, Digital Electronics and Embedded Systems. Consequently, the AI recommends 3 job roles that align with these areas: Embedded Systems Engineer, VLSI Engineer, and IoT Engineer. Overall, this section connects the educational training of the candidate to the application of that knowledge in jobs.

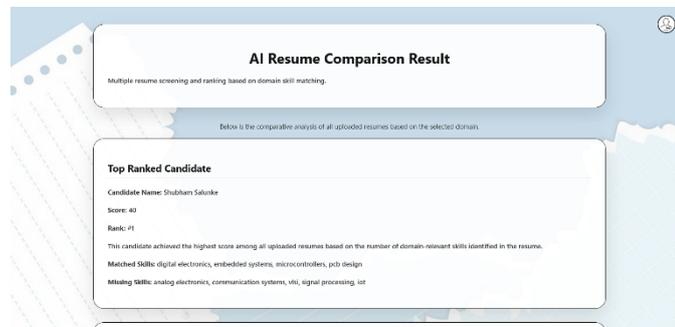


Fig. 6. Comparison Report

A comparison of resumes using an AI software program was made with the results ranking the various applicants upon how their experience and expertise matched a given domain. In this instance, the results are reported as an AI Resume Comparison Result report and ranked Shubham Salunke #1 applicant with a score of 40. In summary the conclusion reached was by Shubham possessing a high score due to possessing the core competencies of digital electronics, embedded systems, microcontrollers, and pcb design was what attributed to his top ranking. Additionally, as noted on the report, several fatal "Missing Skills" including Analog electronics, Communication Systems, VLSI, Signal Processing and IoT have been determined which could allow for the expenation of his candidacy further on his way to obtaining specialized positions.

IX.CONCLUSION-

The Automated Resume Analyzer for Job Recommendations system provides an efficient way to simplify the resume screening and job matching process. The objective of this system is to automate the analysis of resumes by extracting key candidate information and structuring it into a form that can be easily organized. Automating these tasks will reduce the time and effort required to evaluate resumes manually during the recruitment process.

In addition, this system will automatically recommend appropriate job positions for a candidate based on their skills, qualifications, and experience. The resume comparison function of the system will enhance the recruitment process by allowing multiple resumes to be analyzed so that the best-fit candidate for a given position will be identified. In summary, the proposed system illustrates that automated resume analysis positively impacts efficiency, accuracy, and decision making during the recruitment process.

Future improvements to the system will include integrating advanced technologies, broadening the job datasets, and enhancing the accuracy of resume analysis to produce better job recommendations.

X.ACKNOWLEDGEMENT-

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XI. REFERENCES-

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