

AI POWERED RESUME BUILDER

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Abstract

An AI-driven resume builder is a smart application that simplifies and improves the process of creating professional resumes. It uses artificial intelligence along with natural language processing to generate structured and customized resumes based on details provided by the user, such as education, skills, and experience. The system evaluates this information and produces content that meets industry expectations and job-specific requirements. It also offers instant suggestions to enhance grammar, layout, and keyword usage, resulting in clearer and more professional resumes. By applying machine learning techniques, the system recommends relevant skills and achievements that strengthen the document. Additionally, it ensures resumes are optimized for Applicant Tracking Systems (ATS), improving the chances of selection. Users can personalize templates according to their preferences, and the platform highlights strengths while identifying areas for improvement. This approach minimizes effort and time while maintaining consistency and accuracy. The tool supports various job roles and experience levels, making it suitable for a wide audience. Overall, it helps candidates create impactful resumes efficiently, improving their chances in the recruitment process.

Keywords- Artificial intelligence(AI),Machine Learning(ML),Applicant tracking system(ATS)Optimization, Career Enhancement ,Personalized resume.

1. Introduction

An AI-powered resume builder is an advanced digital tool designed to help individuals create professional and impactful resumes with ease. It uses artificial intelligence to analyze user input, job descriptions, and industry trends to generate tailored resume keywords, improve sentence structure, and highlight relevant skills and achievement [1], [2]. By leveraging natural language processing, AI ensures that resumes are optimized for Applicant Tracking Systems (ATS), increasing the chances of getting shortlisted [2], [7].

AI resume builders often provide smart templates, real-time feedback, and customization options to suit different career levels and industries [3]. They can automatically format resumes, correct grammar, and enhance clarity, saving users significant time and effort [1]. Additionally, some platforms offer personalized recommendations based on the user's experience and career goals [4].

These tools are especially beneficial for fresh graduates and job seekers who may lack experience in resume writing. They help reduce errors and ensure that resumes meet professional standards [1] ,[5].

Overall, AI-powered resume builders are transforming the job application process by making resume creation faster, smarter, and more efficient. [1], [2]

2. Related work

Numerous studies have examine the application of artificial intelligence in resume creation and recruitment systems[3]. Traditional tools like word processors and simple templates lack advanced capabilities such as keyword optimization and ATS compatibility , leading to the emergence of AI-based solutions [2].

Recent research emphasizes the integration NLP and ML techniques to improve resume quality for. For instance [7]. Ai systems can extract important keywords from job descriptions and automatically adjust resume to better match ATS requirements [7]. These tools provide intelligent templates ,real-time feedback ,and customization features suited for various industries and career stages [2]. They also assist in formatting, grammar correction ,and enhancing clarity ,saving considerable time for users . Additionally ,some platforms deliver personalized suggestions based on user profiles and career objectives.

Advanced models like BERT, Robert, and transformer based architectures are increasingly used for automated content generation and semantic analysis[6]. These technologies have shown improvements in readability, ATS compatibility, and reduced resume creation time [6].

However challenges such as lack of personalization, dependency on data quality, and potential bias still exist, indicating the need for more refined AI systems [8].

3. Problem Statement.

In today's competitive job environment, creating a well-structured and effective resume is a challenge, especially for fresh graduates and individuals with limited experience. Traditional methods often lack proper guidance, resulting in poorly organized resumes with grammatical mistakes and missing relevant skills.

Another major issue is the widespread use of ATS by employers. Many qualified candidates are rejected because their resumes are not properly formatted or lack the necessary keywords.

Additionally, existing tools may not provide real-time feedback or personalized suggestions based on industry standards. Therefore, there is a need for an intelligent system that can automatically generate, improve, and customize resumes to meet professional requirement.

4. Proposed Methodology

The proposed system introduces an AI-based job portal designed to address the limitations of traditional platforms. It integrates a resume builder, job recommendation system, and application tracking module to simplify the recruitment process.

For job seekers, the platform offers an intelligent resume builder that creates role-specific resumes. It uses NLP techniques to analyze user profiles and job descriptions, providing suggestions for improving keywords, formatting, and skills.

The workflow includes:

- User registration and profile setup
- Resume creation or upload with feedback
- Skill analysis and improvement suggestion
- AI-based job recommendations
- Application tracking and interview support

For employers, the system streamlines hiring through smart filtering, candidate shortlisting, and interview scheduling. Employers can create job postings and receive AI-curated candidate lists.

The system is built using:

- React.js(frontend)
- Node.js & Express.js(backend)
- MongoDB(database)
- NLP tools like spacy and NLTK

UML diagrams such as use case, sequence and activity diagrams represent system functionality and dataflow.

>>The system collects user inputs such as personal details, education, skills, work experience, and career goals through a simple interface.

>>The entered information is cleaned, organized, and structured into predefined resume sections like summary, experience and skills.

>>Using natural language processing(NLP).the system generates professional and impactful resume content, including summaries and job descriptions.

>>The user can choose from multiple resume templates and the system automatically formats the content to create a visually appealing resume.

- Improved quality: Better keyword and professional structure.
- Higher ATS Scores: Increased chances of passing automated screening.
- User Satisfaction: Most users find the tools easy and helpful.

- Discussion:

AI tools play an important role in modern job searching by helping candidates meet industry standards. They are especially useful for fresh graduates and less experienced users.

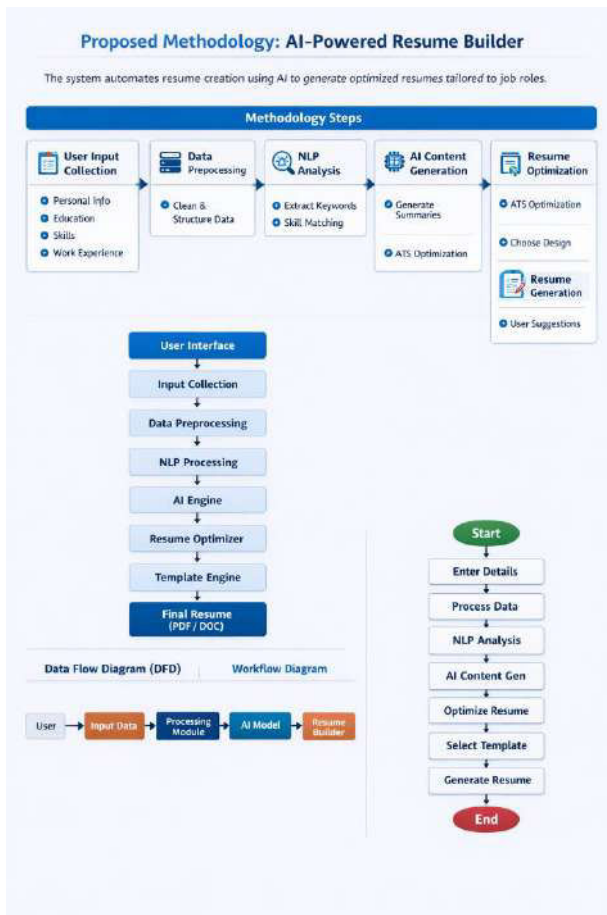


Fig: "AI-Powered Resume Builder System Architecture and Workflow Diagram"

5. Results and Discussion

Results

Studies indicate that AI-powered resume builders significantly improve both efficiency and quality. They enhance ATS compatibility and reduce resume creation time considerably.

Key findings include:

- **Time Efficiency:** Resume creation time is reduced drastically.
- **Improved Quality:** Better keyword usage and professional structure.
- **Higher ATS Scores:** Increased chances of passing automated screening.
- **User Satisfaction:** Most users find the tools easy and helpful.
- **Discussion**

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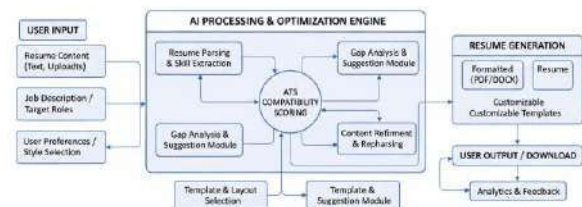
However, challenges still exist:

- Risk of generating generic content
- Dependence on training data quality
- Difficulty in understanding complex human language
- Concerns about data privacy.

Future improvements focus on:

- Better personalization
- Dynamic templates
- Advanced career guidance features

AI-POWERED RESUME BUILDER SYSTEM: DATA FLOW DIAGRAM



6. Conclusion

The AI-powered resume builder is an innovative solution that enhances resume creation and recruitment processes. It simplifies the task by using intelligent algorithms to generate structured and personalized resumes.

By analyzing user data and industry requirements, the system ensures resumes meet both recruiter expectations and ATS standards. It reduces errors, improves quality, and saves time.

The platform also makes resume building accessible to users with limited writing skills, promoting inclusivity. While the system is highly effective, further improvements such as enhanced customization and multilingual support can increase its impact.

Overall, AI-powered resume builders bridge the gap between job seekers and employers, making the hiring process more efficient and effective.

The AI-powered resume builder offers an efficient and intelligent solution for creating professional resumes. It enhances resume quality by providing personalized suggestions, proper formatting, and keyword optimization for better ATS compatibility. The system saves

time and reduces errors ,making it especially useful for job seekers with limited experience .Overall, it improves the chances of getting shortlisted in todays competitive job market

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