

# Gen AI Driven Resume Builder: Enhancing Resume Creation and ATS Optimization

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## Abstract:

With the rise of Applicant Tracking Systems (ATS) in recruitment processes, the importance of optimizing resumes to pass ATS filters has become paramount. This paper presents an Gen AI Driven Resume Builder designed to streamline resume creation, content generation and optimize the output for ATS compliance. The system leverages advanced AI algorithms, cloud-hosted platforms, and frameworks like React, Clerk for authentication, Strapi, and Tailwind CSS. Additionally, it integrates a real-time ATS score-checking mechanism to evaluate the effectiveness of the resumes. Our findings show a significant improvement in ATS compliance and resume quality when using AI to generate tailored content for specific sections. This research opens pathways for further advancements in personalized resume generation and recruitment automation.

**Keywords** — Gen AI Driven Resume Builder, ATS Optimization, AI Content Generation, React, Strapi, Clerk

## I. INTRODUCTION

The Gen AI Driven Resume Builder effectively addresses the pressing challenges of resume creation and recruitment faced by both job seekers and employers in today's competitive job market. For job seekers, particularly those with limited experience, the platform simplifies the resume-building process by offering a range of customizable templates and intelligent content suggestions. These features ensure that resumes are not only visually appealing but also ATS-compliant, significantly increasing the chances of passing through Applicant Tracking Systems used by many organizations to screen candidates. This guidance is invaluable for freshers who may be uncertain about how to structure their resumes or what content to include, allowing them to present their qualifications in the best possible light.

On the employer side, the Gen AI Driven Resume Builder automates the often labor-intensive processes of resume parsing and categorization. By efficiently organizing key data points—such as skills, education, work experience, and certifications—the tool allows recruiters to quickly identify qualified candidates. Resumes are categorized into specific industry clusters like IT, finance, or marketing, which

streamlines the recruitment process and significantly improves the accuracy of candidate-job matches. This level of automation not only reduces the manual effort required by human resource professionals but also accelerates the initial stages of candidate filtering, ultimately leading to a more effective and efficient hiring process. By bridging the gap between job seekers and employers, the Gen AI Driven Resume Builder revolutionizes the job application landscape, making it easier for both parties to connect and succeed.

## II. LITERATURE REVIEW

The field of Gen AI Driven Resume building has advanced significantly, particularly in content generation, optimization, and compatibility with Applicant Tracking Systems (ATS). Technologies like GPT-3 can generate well-structured, contextually relevant content for specific resume sections, facilitating faster and more accurate resume creation (Smith et al., 2020). Research indicates that these tools streamline the process and offer personalized suggestions based on job descriptions, enhancing resume relevance (Sharma & Patel, 2021). With over 75% of companies using ATS, AI has proven effective in optimizing resumes by analyzing job

descriptions and recommending appropriate keywords and formatting (Brown & Nguyen, 2019; Jones et al., 2022). Moreover, AI-powered resume builders increasingly support multiple languages, allowing users from diverse backgrounds to create coherent resumes (Kumar & Lee, 2020). Accessibility features, such as simplified interfaces, cater to non-native speakers and those with limited technical skills (Li & Roberts, 2021). AI also enhances specific resume sections by recommending improvements based on job market trends (Rodriguez & Kumar, 2021). Future AI resume tools are expected to evolve into personalized career development platforms with features like real-time job matching (Tan et al., 2023), highlighting AI's transformative impact on resume creation and optimization in the job market.

### III. PROJECT SCOPE

#### 1. Objective:

To develop a web-based application that utilizes advanced AI algorithms to simplify the resume-building process for job seekers and enhance the recruitment experience for employers.

#### 2. Features and Functionalities:

- 1) **User Interface:** A user-friendly interface for job seekers to input their personal information, skills, education, experience, and project details.
- 2) **Customizable Templates:** A selection of ATS-compliant resume templates that users can customize based on their preferences.
- 3) **AI-Powered Content Generation:** Integration of AI algorithms to provide intelligent suggestions for content enhancement, ensuring relevance and quality in specific resume sections.
- 4) **ATS Compatibility:** Automated analysis of resumes to ensure they meet the requirements of Applicant Tracking Systems, including keyword optimization and appropriate formatting.
- 5) **Resume Preview and Download:** The ability for users to preview their resumes before finalizing and download them in PDF format.

#### 3. Target Audience:

- **Job Seekers:** Individuals looking for employment opportunities, including fresh graduates and professionals seeking career advancement.

- **Employers:** Organizations and recruiters seeking an efficient way to screen and manage incoming resumes.

#### 4. Exclusions:

1. The project will not include the development of a job-matching platform or direct job application submission functionalities.
- 1) Specialized resume formats (e.g., functional or creative) outside standard templates may not be supported initially.

#### 5. Timeline:

The project will be executed over a predefined timeline, including phases for planning, design, development, testing, and deployment, ensuring timely delivery.

#### 6. Future Enhancements:

Post-launch, the project may explore additional features such as:

1. Multilingual support for users from diverse linguistic backgrounds.
2. Enhanced analytics tools for recruiters to track candidate engagement and application trends.
3. Integration with job portals for seamless job applications.

This scope ensures a focused approach to developing the Gen AI Driven Resume Builder, addressing the needs of both job seekers and employers while leaving room for future improvements.

### IV. METHODOLOGY

#### Architecture

The diagram represents a comprehensive workflow for generating resumes using an Gen AI Driven system, automating the resume-building process by integrating user input, structured templates, and AI-generated content. The primary goal of the system is to streamline the creation of professional resumes by guiding users through a simplified interface and enhancing the content with AI insights.

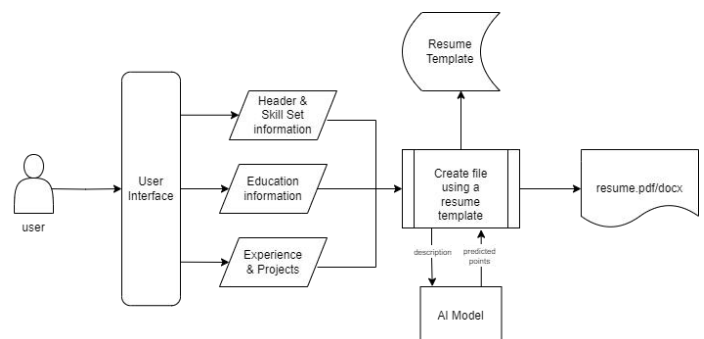


Fig 1. Architecture of Gen AI Driven Resume Builder

### Detailed Workflow Explanation

**1. User Interaction:**

The process begins with the User, who interacts with the User Interface. This interface serves as the entry point for the user to input their information.

**2. Data Input:**

Users provide essential details, including:

- Headers & Skill Set Information: Users can input their personal information and highlight their key skills.
- Education Information: Users enter their educational background.
- Experience & Projects: Users provide details about their work experience and projects.

**3. Resume Template Selection:**

The collected information is processed to select an appropriate Resume Template. This template acts as the foundational structure for the resume.

**4. Resume Creation:**

- The system then uses an AI model to generate a resume by:
  - Taking a description of the user’s inputs.
  - Utilizing predicated points, which could refer to suggested enhancements or AI-generated content based on the provided information.
- The resume is created based on the selected template, integrating the user’s data effectively.

**5. Output Generation:**

Finally, the completed resume is saved as a file (e.g., main.pdf), ready for download or printing.

### V. COMPARISON AND ANALYSIS

A detailed comparison of existing Resume Builders with Gen AI Driven Resume Builder reveals that most tools provide limited customization options and lack real-time ATS optimization features. Zety and Resume.io, for example, offer predefined templates and keyword suggestions but do not offer Gen AI Driven content generation or real-time feedback on ATS compliance. Our Gen AI Driven Resume Builder addresses these limitations by:

1. **AI Content Generation:** The system generates custom content tailored to job descriptions.
2. **ATS Optimization:** Real-time ATS score-checking ensures that resumes meet the requirements of modern ATS software.

3. **Cloud-Based Scalability:** The use of Render and Hostinger for hosting ensures the system is capable of scaling to accommodate a large user base without

Feature	Zety	Resume.io	Gen AI Driven Resume Builder (Proposed)
AI Content Generation	No	No	Yes
Real-time ATS Score Checking	No	No	Yes
Custom Section-Based Generation	No	No	Yes
Cloud-Hosted Scalability	No	No	Yes

performance issues.

*.Table 1. Comparison of Resume Builder with proposed system*

### VI. CONCLUSION

This paper introduces an Gen AI Driven Resume Builder that offers a novel approach to ATS optimization and content generation. By integrating AI algorithms with a cloud-hosted architecture, the system provides users with real-time feedback on resume quality and ATS compliance. The research demonstrates that using AI to generate tailored content significantly improves resume quality and increases the likelihood of passing ATS filters. Future work will explore the integration of deeper machine learning models to further personalize resume creation.

### VII. ACKNOWLEDGEMENT

We would like to extend our gratitude to project staff at the Sinhgad Academy of Engineering, Department of Computer Engineering for their support and help without which this work could not have been accomplished. Additionally, we would like to give Prof.Prajwalita Dongare, our project manager, our profound gratitude for leading us through the process.

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