

Smart AI Resume Builder

1. Introduction

The Smart AI Resume Builder is a web-based application designed to help users create professional, industry-standard resumes using Artificial Intelligence. The system simplifies resume creation by generating personalized summaries, organizing user details, and producing downloadable PDF outputs. It combines modern web technologies—React, Clerk Authentication, Node.js, and AI models—to give users a seamless and automated experience.

The project primarily focuses on solving a common problem: many job seekers struggle to create well-structured, ATS-friendly resumes that highlight their strengths. This application uses AI to generate summaries, suggest improvements, and format the resume automatically.

2. Objectives of the Project

The major objectives are:

- To automate resume writing using AI
- To allow users to securely sign in using Clerk authentication
- To store and manage user resume data
- To generate ATS-friendly summaries, skills, and experiences
- To produce clean, printable, multi-section PDF resumes
- To allow users to create and save multiple resumes

3. System Architecture

The Smart Resume Builder uses a **client-server architecture**:

Frontend (React + Vite)

- Framework: **React 19**
- UI Components: **TailwindCSS, ShadCN UI**
- Authentication: **Clerk**
- Resume Sections:
 - Personal Details
 - Summary (AI-generated)
 - Experience
 - Education
 - Projects

- Skills
- Achievements
- PDF Generation: Uses **html2canvas** + **jspdf** for printing.

Backend (Node.js + Express)

- Provides API endpoints for AI summary generation.
- Integrates with Google Gemini API or uses a fallback mock AI.
- Responsible for generating summaries based on:
 - Job Title
 - Skills
 - Experience
 - User Profile

Authentication System

- Implemented using **Clerk**, providing:
 - Sign-in
 - Sign-up
 - User dashboard
 - Security & session management

4. Features of the System

AI-Powered Resume Summary

- The user enters basic details, and AI generates a professionally written summary, improving resume quality significantly.

Multi-Resume Dashboard

- Users can create and manage multiple resumes in a dashboard

Editable Resume Sections

- All sections are fully customizable and stored in the database.

Live Resume Preview

- A dynamic preview updates in real-time as the user types.

PDF Export

- The user can download the resume as an A4 PDF using browser print optimization.

User Authentication

- Clerk ensures secure login, logout, and session storage.

5. Advantages

- Saves time for job seekers.
- Uses AI to improve resume quality.
- User-friendly and easy to navigate.
- Customizable and scalable..

7. Future Enhancements

- Multiple resume templates
- Drag-and-drop section reordering
- Support for image uploading

8. Conclusion

The Smart AI Resume Builder successfully integrates modern web technologies and AI to solve a real-world problem. It demonstrates proficiency in frontend development, backend API creation, AI integration, user authentication, and deployment. The project not only simplifies resume creation but also enhances resume quality using AI-generated content. It serves as a practical and scalable solution for students and professionals looking to create resumes efficiently.

9. Results

