

Project Report: Smart Resume Builder with AI Suggestions

1. Objective The objective of this project is to design and develop a web-based application that assists users in creating professional resumes efficiently. The system leverages Artificial Intelligence (AI) to provide real-time suggestions for improving resume quality, structure, and content relevance. The platform aims to simplify resume creation for users with varying technical and professional backgrounds.
2. Tools and Technologies **Frontend:** React.js, Tailwind CSS **Backend:** Node.js, Express.js **Database:** MongoDB **AI Integration:** OpenAI API (free tier) **Other Tools:** HTML5, JavaScript (ES6+), Axios, React PDF library
3. Key Features **User Input Form (React Form):** A structured, dynamic form collects user details such as personal information, education, work experience, projects, and skills. **Dynamic Resume Preview:** Real-time preview of the resume as the user fills out the form with template selection options. **PDF Export Functionality:** Download completed resumes as PDF using libraries like react-pdf or jsPDF. **AI Suggestion System:** "AI Suggest" button analyzes content using OpenAI API for improvement tips and keyword optimization. **User Accounts (Optional):** Secure user login/signup with JWT authentication to save and manage multiple resumes.
4. System Architecture **Frontend (React)** → communicates with **Backend API (Node.js/Express)** → interacts with **Database (MongoDB)** → utilizes **OpenAI API** for AI-based text enhancement.
5. Implementation Steps Setup React and Tailwind UI components. Design the resume form structure and templates. Integrate backend API for data storage and retrieval. Connect OpenAI API for AI suggestions. Add dynamic resume preview and PDF export. Implement authentication and user data persistence. Testing and deployment (e.g., Vercel/Render for frontend, Railway/Heroku for backend).
6. Benefits Saves time and effort in creating professional resumes. Offers AI-powered enhancement suggestions. User-friendly interface with live preview and editing. Secure and accessible from any device.
7. Future Enhancements Multiple resume templates and themes. AI-driven job matching based on resume content. Multilingual support. Integration with LinkedIn and job portals.
8. Conclusion The **Smart Resume Builder with AI Suggestions** combines frontend interactivity, backend efficiency, and AI-driven intelligence to create a powerful and user-friendly tool. It showcases skills in full-stack web development and demonstrates real-world application of AI in personal productivity.