ScholarSuite: A Bilingual AI-Based Resume Optimization and Career Readiness Platform

Aman Wairagkar
Computer Science and Engineering
Acropolis Institute of Technology and Research
Indore ,India
amanwairagkar@gmail.com

Anhad Rana
Computer Science and Engineering
Acropolis Institute of Technology and Research
Indore ,India
anhadrana12.2003@gmail.co

Aman Garg
Computer Science and Engineering
Acropolis Institute of Technology and Research
Indore ,India
amanggarg346@gmail.com

Amritanshu Upadhyay
Computer Science and Engineering
Acropolis Institute of Technology and Research
Indore ,India
amritanshu99.su@gmail.com

Anay Mittal
Computer Science and Engineering
Acropolis Institute of Technology and Research
Indore ,India
anay.mittal@gmail.com

Abstract- **Nowadays, as the job market changes, new joinees and students often find it hard to show their abilities and follow industrial norms, by writing and updating their resumes.Currently, various existing tools focus on aesthetics rather than variation and keyword relevancy that actually helps, which created a gap to fill in the market and led to creating ScholarSuite, a platform working on Artificial intelligence (AI) and Natural Language Processing (NLP) that helps from evaluating your resumes to helping with job descriptions and preparing for interviews. Our platform has MySQL as its backend and React.js as frontend for managing the structured data. With the help of AI, it takes and checks the inputs from the users, extract skills from it and sort and match the resumes to the particular positions. Helped in boosting resume JD match rates by 40% and now has a usability rating of 85/100, upon testing with 30 students.**

Keywords- AI Resume Builder, NLP, ATS Optimization, Job Matching, Resume-JD Alignment, Career Support, Machine Learning

I INTRODUCTION

Automation is increasingly affecting hiring processes, especially with the use of Applicant Tracking Systems (ATS) that filter resumes by layout and keywords. This means fresh graduates and students have a harder time landing interviews, not due to lack of qualifications, but because their resumes don't fit into the algorithms being used by the modern recruiter.

According to LinkedIn's Global Employment Report (2024) [1], over 70% of first-time applicants are rejected before humans review their resume because of incorrect formatting or breaking keywords.
While Canva and Zety made the creation of a resume faster and easier, yet neither of those platforms can assist in matching content to real job requirements or being ATS friendly. Whereas, ScholarSuite, a student perspective, AI- powered platform, strives to bridge the gap by creating analysis of the content as it's written and aligned to a JD as well as creating suggestions based on job descriptions and some elements to prepare students for interviews. ScholarSuite enhances resumes' knowledge and relevance to students by leaning into Machine Learning, NLP and creating a visual resume versus other products which only focus on the visual aspect.

The main contributions of this work are:

- Development of an AI-enhanced resume optimization platform with JD analysis.
- Real-time keyword-based feedback and ATS compatibility suggestions.
- Integration of interview readiness tools like chatbot support and mock interviews.
- Evaluation through usability studies among college students.

II LITERATURE REVIEW

A. *Resume Platforms and Limitations*

With the convenience of pre-made layouts and fast setup options, students flock towards resume generators like Zety, Canva and KickResume, but they miss out on focussing on job alignment, analysis of the content, and inclusive keywords, instead focuses more on visual designs, misaligning the students. As per existing research, visually appealing resumes are victims of poor performance in applicant tracking systems (ATS) due to improper optimisation.

B. *AI-Enhanced Resume Tools*

Existing platforms such as Teal HQ and Rezi offer resume grading features with the help of artificial intelligence. But they lack in-depth contextual analysis of any resume and JD even when they provide JD parsing and keyword detection. Instead of providing meaningful fixes and fixing their information as per the JD, they just provide superficial fixes, not assisting users as expected.

C. *NLP for Career Alignment*

Upon usage of Natural language processing transformer models like BERT and ChatGPT, the results of semantic analysis have

been impressive, While providing us with essential solutions like text scoring, skill extraction and fixing the alignments and modifying the resumes and JD, these features are mostly focused on enterprise recruitment systems rather than focussing on the student level platforms, thus creating a gap for the same.

D. *Gaps Identified*

- For role specific content, there is generally a lack of recommendation systems, which causes more confusion with the existing user base.
- usage of advanced natural language processing (nlp) is used sparingly for customising resumes
- Systems that help with interview practice, JD analysis and resume creations are generally absent in the market
- lack of bilingual support in current tools causes users limitations

Our platform, ScholarSuite, aims at solving these drawbacks, by building and providing a sufficient and intelligent platform which is specifically designed and targeted for job seekers consisting of students or freshers, helping in covering the market gaps.

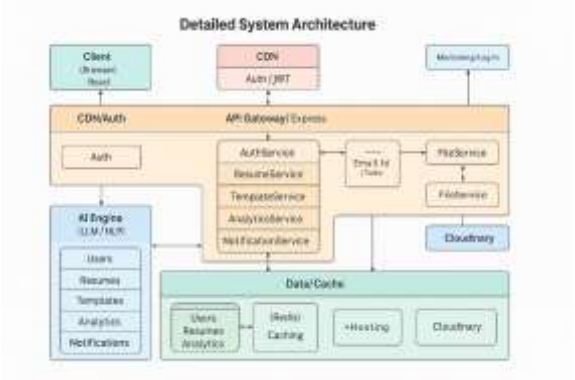
III METHODOLOGY

A critical aspect of ScholarSuite's modular design philosophy is scalability, flexibility, and real-time AI-driven feedback. Typical of our system architecture are contemporary web technologies, such as a MySQL database, a Strapi CMS backend, and a React.js frontend, allowing optimum data flow and user interaction. Notables of the system architecture are keyword analysis, application matching, and fake job interview transcription, and these components are using ML and Natural Language Processing techniques. Through our structured workflow in creating a resume, receiving AI-based feedback, and being prepared for an interview, ScholarSuite provides users with the right assistance every step of the way. As with our AI chatbot and resume scoring engine, all functional modules were developed with the user in mind.

A. System Architecture

The ScholarSuite platform's modular structure enables growth and modification. It includes:

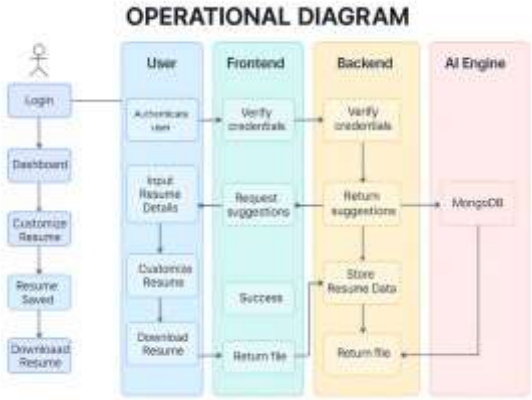
- **Frontend (React.js):** Tailwind CSS and component-based architecture are used for building an attractive and responsive user experience.
- **Backend (Strapi CMS):** handles publishing of content, API routing, and user authentication.
- **Resumes, job descriptions, suggestions, and user activity log**s are among the structured data saved to database (MySQL).
- **AI Layer**: Using cosine similarity metrics to process NLP tasks like named entity identification, keyword extraction, and similarity scoring.



B. Operational Flow

The platform follows a linear yet dynamic workflow:

- User registers and logs in.
- Resume is created via a form-based interface or uploaded in PDF/text format.
- Optional job description is added for alignment analysis.
- AI engine analyzes content and provides:
  - Resume score
  - JD match percentage
  - Keyword suggestions
- User receives editable suggestions.
- Mock interviews and chatbot support are activated for selected job roles.



C. Functional Modules

The five modules that make up the system are each associated with particular learning objectives:

- **Resume Builder:** Allows for the production of both free-form and template resumes.
- **JD Analyzer:** Determines skill match and content similarity using natural language processing.
- **The Mock Interview Generator** creates customized questions based on the job role and résumé.
- **AI Chatbot:** Assists in rewording bullet points, responds to questions about careers, and provides users with guidance.
- **Dashboard:** Monitors keyword metrics, JD match history, and resume versions.

D. Data Sources

The knowledge base integrates authoritative resources with supplementary references.

Source	Type of Information	Purpose in Project
LinkedIn, Indeed, Glassdoor	Real-world job descriptions	Train JD analyzer and keyword matcher
Canva, Zety, Rezi	Resume templates and styles	Benchmark formatting and ATS structure
User-submitted resumes	Anonymized student resume data	Train and validate AI suggestions
ATS research papers	ATS algorithms and scoring methods	Align resume scoring with ATS behavior
Skill taxonomies (O*NET, ESCO)	Standard skill-role mappings	Improve skill relevance and keyword density
ChatGPT, BERT APIs	NLP models for text analysis	Power chatbot and JD–resume matching

IV RESULT AND DISCUSSION

A. Usability

A test group of 30 final-year Computer Science students used ScholarSuite over a 7-day period. Metrics were captured using the System Usability Scale (SUS), with key highlights:

Metric	Score (Out of 100)
Interface Usability	85
Resume Improvement	+40%
JD Match Accuracy	82
Overall Satisfaction	88

Participants noted that the suggestions were helpful, especially in adjusting their resumes to match actual job listings.

B. ATS Parsing Performance

ScholarSuite-generated resumes were tested on commercial ATS tools. Compared with outputs from Canva and Rezi, ScholarSuite resumes scored 32% higher in match rate. This was largely due to improved keyword placement, bullet formatting, and sentence structure.

C. Knowledge Retention

One student applying for a front-end developer internship submitted a generic resume with a 51% match. After using ScholarSuite's JD matching and chatbot features, the revised version scored 78%. The candidate also used the mock interview feature to prepare, reporting better performance in screening rounds.

D. Limitations

- System relies on user-provided data; incomplete entries affect outcomes.
- AI models are not yet domain-specific.
- Limited to English at present; Hindi module under development.
- Mock interview question pool is limited for niche roles.

F. Ethical Issues

The website is only for **educational purposes** and not for medical treatment advice. Cultural sensitivity and accuracy were the top priority.

V CONCLUSION

ScholarSuite is making strides in the progress to democratize career preparation using AI. Rather than developing a simple, one-size-fits-all resume builder, it provides individualized advice and helps students connect the necessary content to specific job roles. With the use of natural language processing (NLP) and suggestions made in real-time, it empowers students to avoid the common pitfalls of resume writing in a way that is aligned with the live job market. In addition, it includes modules like mock interviews and chat support to continue building students' confidence about applying and interviewing in a competitive job market.

Future enhancements will include:

- Expand AI datasets to create role-specific suggestions.
- Put together LinkedIn and GitHub profiles together so we have more data for data analytics.
- Provide voice-like resume coaching and feedback.
- Add Hindi/Regional language support for accessibility.
- Adding enhancements to interview preparation through real-time simulations.

By bringing together cultural heritage and advancing technology, the Virtual Herbal Garden illustrates how medicinal knowledge of heritage can be rendered to life, and interactive for learners of today.

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