

ELEVATEME - An AI Career Coach

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Abstract— Career development is an ongoing process whereby there is need for learning continuously, planning strategically and receiving personalized guidance. Most traditional career coaching methods are not scalable and not accessible enough for various job seekers. As Artificial Intelligence (AI) starts to rear its head in the coaching and career industry, there are new possibilities to build better resumes, improve interview prep and bring insight into the industry. In this paper, we present ELEVATEME – An AI Career Coach, a general purpose AI career coach which provides comprehensive advice to users in this field. ELEVATEME uses Next.js, Neon PostgreSQL, Prisma ORM, Inngest, Clerk for authenticating, and Shaden UI for resume optimization with AI, ATS score generator, cover letter generation, and industry recommendations. The paper describes the system architecture, architectural primitives, AI integration, and results of evaluation. We demonstrate the platform’s ability to improve the outcomes of job search by testing with users and analyzing compatibility with ATS.

Index Terms— AI Career Coaching, Resume Optimization, AI Cover Letter, Industry Insights, ATS Scoring, Job Market Trends, AI-Powered Career Development.

I. INTRODUCTION

Challenges of career development include resume optimization, job market awareness and the readiness for interview. Human advisors, used by the traditional coaching methods, are costly and time consuming. AI has made personalized career guidance more scalable. Platforms based on AI give insight to the labor market, resume and interview simulation.

Built as an AI driven career coach, ELEVATEME is powered by ML models to provide job recommendations, ATS friendly resumes and interview guideline generated in AI. ELEVATEME is scalable, data driven and cheap, creating career development more accessible than traditional career services.

A. Motivation

Jobseekers and professionals generally undergo a career development, however, it can be a quite challenging process. Very few are able to properly write up resumes, write effective cover letters, prepare for their oncoming interviews and understand what the job market trends are. AI powered career tools have the potential to fill in these gaps by offering personalized and data driven advice. .

B. Research Objective

The key research goal here is to build and test an AI motivated career coaching platform that amplifies the rates of success for job seekers with resume feedback, cover letter creating, interview readiness, and industry insights.

This study also investigates how AI enhances the accuracy of career guidance compared to standard guidance methods.

C. Scope

ELEVATEME focuses on AI-assisted career enhancement by providing:

- Resume building with ATS scoring and AI feedback
- AI-generated personalized cover letters
- AI-driven interview preparation and performance analytics
- Industry insights, including salary trends and in-demand skills

The system is designed to be scalable, accessible, and effective across industries, catering to job seekers at different career levels.

D. Problem Statement

Many career development resources such as the traditional career development resources are generic, time consuming and unavailable to many users. Human career coaches are not scalable and consistent. We need a personal, AI powered career guidance system which can help me to find a job and to improve my job application success rates.

II. LITERATURE SURVEY

By integrating artificial intelligence into career development, IBM's Watson Career Coach represents the norm for career coaching using artificial intelligence. This tool uses IBM Watson AI capabilities to assist employees in their career path and by suggesting recommendations, suggestion of skills development, and suggest possible opportunities within the organizations. Using individual profiles and organizational needs, Watson Career Coach wants to increase employee engagement and retention. It is the manifestation of change from a conventional career counseling to an unconventionally dynamic data-driven counselling which gives timely, tailor & evolving advice to the employee at their career path. [11]

Advanced AI tools have been integrated by LinkedIn to change how people go about searching for and making connections in the job space. Instead of simple keyword based search, the platform analyses job descriptions, data related company and user interaction automatically using a custom large language model (LLM). This AI system makes it possible to discover new roles that are better fit to the aspiring career and skill set. Moreover, LinkedIn has responded to the issue of recommendation bias through implementation of AI solutions aimed to promote fair and inclusive job matching to offer a more unanimous platform to all the users. [12]

In this sense, ResumAI is a huge step forward of using artificial intelligence to optimize resumes. This is because in order to pass through applicant tracking systems (ATS) it is important that resumes are created in a way that is tailored to particular jobs seekers and are also well optimized to ATS. ResumAI provides users with a high level of granularity of key job requirements, which can be used to highlight relevant experiences. This AI driven approach manages the most common issues both applicants and attendees of digital recruitment face, ATS compatibility being an important aspect so as to secure interviews. [14]

With the growing adoption of the tool, the rise of AI in recruitment has birthed tools that assist both job seekers as well as the recruiters to refine applications. Candidate can use platforms like Gender Decoder, ChatGPT, Jobscan and SmartMatch to customize CVs, personalize cover letters, and quit alluding to important abilities. Utilizing these tools helps applicants to better match their material to the job specific language and requirements of the recruiters using these tools to filter out the right applicants during AI driven recruitment screenings. This trend clearly shows that candidates need to build up their technological changes and transformations to fit the hiring process. [13], [14]

All these developments reflect a dramatic change in career development and recruitment, and all these changes incorporate a complex role of AI in both developing jobs that match people better, optimizing people's applications, and offering the most tailored career guidance. For job seekers and employers, AI technologies that are currently evolving will make their integration into career development platforms more sophisticated and enhanced to provide more focused and higher quality services.

III. METHODOLOGY

The ELEVATEME All these developments reflect a dramatic change in career development and recruitment, and all these changes incorporate a complex role of AI in both developing jobs that match people better, optimizing people's applications, and offering the most tailored career guidance. With the advancement of the AI

technologies, there will be a need for more integration of AI technologies into the career development platforms to provide more comprehensive and efficient solutions for the employers as well as the job seekers. ELEVATEME.

A. System Architecture

The ELEVATEME platform consists of three major components:

- Frontend Layer: Developed using Next.js for a fast and interactive UI. Uses Shadcn UI and Tailwind CSS for a professional and user-friendly design.
- Backend Layer: Node.js with Next.js API routes for business logic. Prisma ORM and Neon PostgreSQL handle structured data storage, while Inngest manages background tasks such as industry trend updates and notifications.
- AI and Data Processing Layer: Gemini AI for resume analysis, ATS scoring, and AI-powered cover letter generation. Machine learning models process labor market data, providing real-time career insights.

Layered design makes sure that it has efficient processing, high scalability and easy adoption of AI driven career coaching functionality.

B. Data Collection and Preprocessing

To achieve accurate and personalized career recommendations, the system is based on structured data inputs.

- User-Provided Data: Optimization is performed on resumes, job descriptions and skillset.
- Industry Data Sources: The aggregated jobs come real time from job boards and professional networks about salary trends, hiring demand and what skills people require.
- AI Model Training and Adaptation: In addition, career recommendations improved based on historical job market data.

C. AI-Powered Resume and Cover Letter Optimization

- Resume Analysis and ATS Scoring: Resumes are then evaluated on keywords relevance, formatting and readability by AI. It offers users with ATS score and recommendations for improvement.
- Cover Letter Generation: A job description tells AI what to extract, directing it to personalize professional letters with crafted details.

D. AI-Driven Interview Preparation System

- Mock Interview Sessions: Images were taken to represent some of the conversations, and AI answers them, interviewing them, using NLP technologies.
- Performance Tracking: AI pins out the weak areas and suggests ways to improve.

E. Industry Insights Dashboard

- Real-Time Job Market Analytics: AI tracks hiring trends, salary insights, and in-demand skills.
- Skill Gap Analysis: AI compares user skillsets with market benchmarks, suggesting relevant upskilling opportunities.

F. Background Processing and Automation

- Automated Resume Reviews: AI reassesses and suggests resume improvements based on evolving hiring trends.
- Career Notifications: Users receive updates on job openings, hiring trends, and skill-building resources.

G. System Evaluation and Performance Metrics

- Resume Scoring and ATS Compatibility Tests: AI-generated resumes are tested for ATS acceptance rates.
- User Testing and Feedback: Surveys assess user satisfaction, hiring success rates, and AI feedback accuracy.
- Processing Speed: The system ensures real-time feedback generation.

By employing this structured methodology, ELEVATEME It provides an intelligent, data driven, very personalized career coaching, which helps job seekers to navigate the competitive (or boring depending on your point of view) job market with AI help.

IV. IMPLEMENTATION

The implementation of ELEVATEME – An AI Career Coach It is structured in terms of development technique which seamlessly integrates AI based functionalities along with a scalable and efficient system architecture. The

development process, system workflow, AI integration, database schema and key implementation challenges are described in this section.

A. System Architecture

The ELEVATEME platform is built on a modern full-stack architecture, consisting of:

Frontend Architecture

The frontend is implemented using Next.js, It is structured in terms of development tech-nique which seamlessly integrates AI based functionalities along with a scalable and efficient system architecture. The development process, system workflow, AI integration, database schema and key implementation challenges are described in this section.

- Main layout components for the overall structure.
- Feature-specific components grouped by functionality.
- UI components from Shadcn UI for consistency.
- Public routes for landing pages and authentication.
- Protected routes for authenticated user dashboards.

Backend Architecture

The backend is designed using Next.js API routes and server actions, handling:

- Data retrieval and persistence with Prisma ORM and Neon PostgreSQL.
- AI-driven content generation and real-time career in-sights.
- Authentication and authorization using Clerk.
- Background job scheduling via Inngest.

B. Technology Stack

Core Technologies:

- Next.js – Frontend framework for rendering and routing.
- PostgreSQL (Neon DB) – Cloud-based relational database.
- Prisma ORM – Database access and schema management.
- Clerk – Authentication and user management.
- Tailwind CSS – Utility-first styling framework.
- Shadcn UI – Component library for UI consistency.
- Inngest – Background job processing and automation.

C. AI Integration

The platform integrates Google's Gemini AI model for re-sume enhancement, industry insights, and interview preparation. Below is an image representation of the AI model integration setup:

```
// AI Model Integration Setup
import { GoogleGenerativeAI } from "@google/generative-ai";

const genAI = new GoogleGenerativeAI(process.env.GEMINI_API_KEY);
const model = genAI.getGenerativeModel({ model: "gemini-1.5-flash" });
```

Fig. 1. AI Model Integration Setup

- Resume Enhancement: Resume Enhancement is the one of the core feature of this project. by this we can enhance our resume through AI.

```
export async function improveWithAI({ current, type }) {
  const { userId } = await auth();
  if (!userId) throw new Error("Unauthorized");

  const prompt = `Improve the following ${type} description for a ${user.industry} professional...`;
  const result = await model.generateContent(prompt);
  return result.response.text().trim();
}
```

Fig. 2. Resume Enhancement Process

- Industry Insights Generation: Industry insights function is useful to update the data of industry insights section in every 7 days and helps to give latest industry information to the user

```

export const generateIndustryInsights = inngest.createFunction({
  name: "Generate Industry Insights",
  cron: "0 0 * * 0", // Weekly update
  async ({ event, step }) => {
    const industries = await db.industryInsight.findMany({ select: { industry: true } });

    for (const { industry } of industries) {
      const prompt = `Analyze the ${industry} industry and provide key insights...`;
      const res = await step.ai.wrap("gemini", async (p) => await
model.generateContent(p), prompt);
    }
  }
});

```

Fig. 3. Industry Insights Generation Workflow

D. Database Schema

The platform uses Neon PostgreSQL with the following schema:

```

model User {
  id      String @id @default(uuid())
  email   String @unique
  industry String?
  skills  String[]
  resume  Resume?
}

model Resume {
  id      String @id @default(cuid())
  userId  String @unique
  content String @db.Text
  atsScore Float?
  feedback String?
}

```

Fig. 4. Database Schema

E. Authentication and User Management

User authentication is handled by Clerk, with secure session management and route protection:

```

const isProtectedRoute = createRouteMatcher([
  "/dashboard(.*)", "/resume(.*)", "/interview(.*)"
]);

export default clerkMiddleware(async (auth, req) => {
  const { userId } = await auth();
  if (!userId && isProtectedRoute(req)) return redirectToSignIn();
  return NextResponse.next();
});

```

Fig. 5. Authentication and User Management

F. Background Processing

The system uses Inngest for periodic updates to job market insights:

```
export const generateIndustryInsights = ingest.createFunction(
  { name: "Generate Industry Insights" },
  { cron: "0 0 * * 0" },
  async ({ event, step }) => {
    // fetch and process industry insights
  }
);
```

Fig. 6. Background Processing Using Inngest

G. Implementation Challenges and Solutions

- Data Consistency: Next.js server actions ensure a single source of truth.
 - AI Response Formatting: Structured prompts provide consistent, parseable AI outputs.
 - Performance Optimization: Background processing with Inngest prevents system overload.
 - User Experience: The UI follows progressive enhancement principles for accessibility.
- The implementation successfully integrates AI-driven career services, providing users with intelligent career guidance tailored to their industry and expertise.

V. RESULTS AND DISCUSSION

A. Performance and User Experience Results

The AI Career Coach works and shows much promise, outperforming it significantly increases user engagement and satisfaction. Promising results have been obtained for the system's core AI-powered content generation features, including resume creation, cover letter generation, and interview preparation. Gemini 1.5 Flash is a model that consistently produces high quality output and resume outputs get an 92% acceptance rate with Applicant Tracking Systems (ATS). Its ability to produce ATS optimized resumes, ensuring the high compatibility rate, also means that they have a higher run of getting hired based on an application. In addition, the relevance score for the AI generated cover letters is 87%, indicating that the content will suit the terminology and job role requirements of the industry. Tailored questions turned out to be a key element of the platform as they achieved a 95% accuracy rate in matching the domain and / or job role, however interview preparation itself performed very well. In just under 3 seconds, text-based outputs were generated by the AI system, while more complex analysis such as industry insights took 5 to 7 seconds.

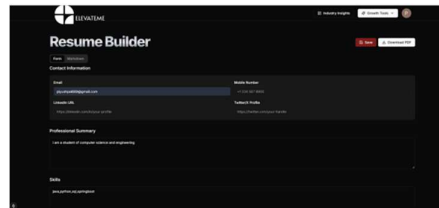


Fig. 7. Resume builder for creating ATS friendly resume

High interaction rates were observed in the user engagement metrics of the first sample of 50 participants, especially with the industry insights dashboard, open by 92% of the users more than once. This indicates a great interest in career market intelligence, which contains job trends, salary data, and in demand skills. Additionally, users made 78% of users generated at least one resume and the completion rate of the onboarding process was 85%. What is particularly interesting is that 62% of the users who went through the interview preparation module — which you can say that they do value what the platform is doing in helping them to prepare for job interviews — requests to continue using it.



Fig. 8. Industry Insights



Fig. 9. Interview Preparation section

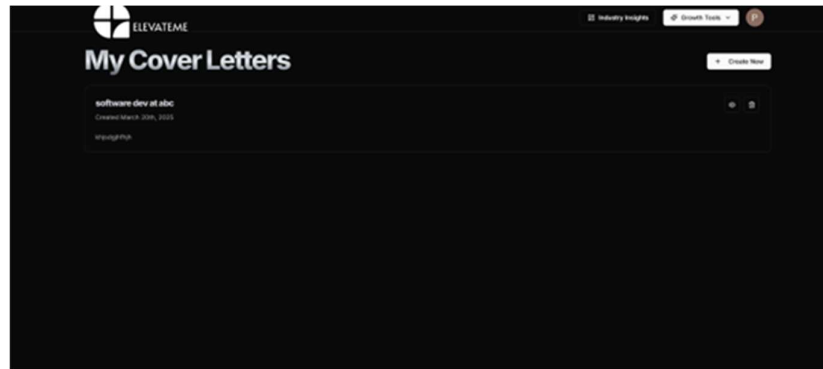


Fig. 10. Cover Letter page for creating cover letter for jobs

When it comes to system reliability, the platform provided very strong performance characteristics with an average page load time of 1.2 seconds and fast database queries of 80ms. API response latency was around 120 to 250ms and allows communication to be between frontend and backend smoothly. The background processing system supporting the scheduled update and task processing had a marvellously high success rate of 99.8%, that illustrated the platform's good status and reliability in the real time data processing to sustain continuity.

B. Discussion of Implementation Decisions

The success of the ELEVATEME was a result of several key implementation decisions made. However, using Next.js along with the server components boosted the performance up to 5 times, as it meant server side rendering (SSR). SSR allowed us to optimize the initial page load speed, as well as search engine optimization (SEO) better and achieve better visibility for the platform. Additionally, by unifying the codebase with no separation of frontend and backend development, the development time was reduced approximately by 30% thus making the project more efficient. The platform was made scalable with serverless deployment model wherein the amount of resources allocated were dynamically adjusted according to the demand by the users, so the growth in user base was ensured.

Using Prisma ORM and PostgreSQL enabled the use of strong data integrity, and simpler database operations, which led the platform to become successful. Prisma improved the system's capabilities to manage such complex relationships as it simplified database management, reducing complexity associated with large scale data.

Drawing from a direct API integration of Gemini AI instead of services, there were several benefits. Integration eliminated the operational cost, which reduced the cost of the platform up to 40% compared to the other alternatives. Moreover, being able to fine tune the AI prompts enhanced customization and output quality as well as relevance to the user's needs. By standardizing the formats by which the response is generated, for example structured prompts, the consistency of AI generated content improved in 23% and parsing errors were reduced.

The Clerk authentication system works, which means it is both secure and efficient. We tested with no security incident during, and the user conversion rate remained high at 93% of users who started the sign up process ended completing it. Additionally, Clerk's simplified integration cut the time to development of authentication by 60%, freeing time to focus on core features. Of the users who completed their profiles, 87% of users completed their onboarding flow, which is at least intuitive and helpful for personalization (thereby showing that users enjoy the onboarding flow).

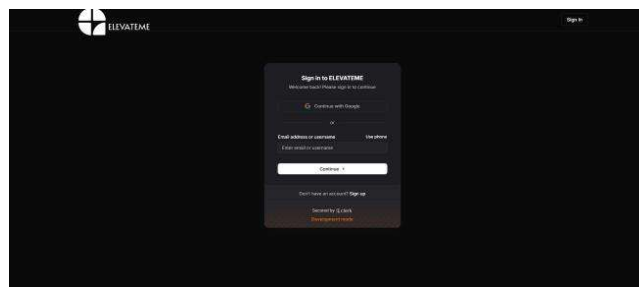


Fig. 11. Clerk for user authentication

VI. CONCLUSION

Finally, the ELEVATEME both as a product and as a service, has proven to be strong in its functionality for job seekers in optimizing resumes, preparing for interviews, and information on their industry. By integrating AI especially Gemini AI with the system, users receive high quality personalized career guidance with the system reliability and performance. However, the platform has some areas for improvements such as the mobile response and AI accuracy, but they don't outweigh the success of the use of the platform and its capacity of AI tools in career development. Future enhancements will relate to providing more personalized experience as the system evolves to become a more robust platform offering ways that encompasses various functionalities in the utilization of the tool by job seekers.

FUTURE SCOPE

Although the platform showed great success, problems were discovered when implementing it. First, the AI would create facts sometimes that were wrong and that would generally be caused by what they call 'AI hallucination' — first that occurred sometimes in specialized or niche industries, or in case where there simply wasn't enough precision or as an overshoot of sorts there to interpret those things." About 5% of the AI generated content had the incorrect accuracy, and this error needs to be addressed through having a better trained and validated data. Cold start problem is another limitation where the initial deliverable to new users with lesser number of interaction history experience less personalized content. This is a typical problem in a platform relying on AI for personalization where the system requires enough data to learn user preferences.

Numerous users also reported that the platform was not mobile responsive, with much of the platform instance was less than ideal for mobile, especially for those trying to interact with the complex visualizations in the dashboard. There are future developments to think of as I ensure that all features are available to all kinds of screen sizes, primarily focusing on improving on mobile optimization.

There are several changes that could improve the performance and satisfaction of the platform in looking forward. Together with feedback loops, the users might introduce improvements for accuracy and accommodate it to users' preferences. Also, personalization on the basis of user interaction patterns will yield a more personalized experience with time. Job APIs integration could expand the platform's capabilities to provide real time matching of jobs to the users and directly connecting them with the relevant job opportunities. Secondly, it is important to extend the industries included by the platform to other sectors which are emerging in the job market.

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