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RAJMA AI-Driven Resume Analyzer for Creation, Customization, Screening, and Job Matching

Dr. M.K. Jayanthi Kannan, Shivansh Shukla, Anshuman Parmar, Abhinav Jha, Aryan Singh, Utkarsh, Harish B

Professor, VIT Bhopal University, Bhopal-Indore Highway, Kothrikalan, Sehore, Madhya Pradesh, India

Student, School of Computing Science and Engineering, VIT Bhopal University, Sehore, Madhya Pradesh, India

ABSTRACT: The RAJMA-Resume Analyzer with Job Match Assessment is an AI-powered web application designed to streamline the hiring process for job seekers and recruiters. By analyzing uploaded resumes and comparing them with job descriptions, the tool generates a match score and offers real-time feedback to improve resume quality and job alignment. Key features include skill gap identification, resume optimization tips, and unbiased assessment through AI. Developed using Python, Flask, and NLP tools on the backend, and HTML/CSS/JavaScript on the frontend, this system enhances hiring accuracy, saves time, and ensures a user-friendly, efficient, and fair recruitment experience for all stakeholders. RAJMA's Workflow, Data Ingestion: Resumes (PDF/DOCX) and job descriptions (JSON/text). Preprocessing: Text extraction using PyPDF2/OCR. Noise removal (headers, footers). AI Analysis: Skill Extraction: Fine-tuned BERT for NER (e.g., "Python," "Project Management"). Job-Description Embedding: Sentence-BERT for semantic similarity. Match Scoring: Weighted algorithm (skills: 50%, experience: 30%, education: 20%). Bias Mitigation: Anonymizes demographic data (gender, ethnicity). The Output is an Interactive dashboard with scores, skill gaps, and feedback. Result Analysis, Dataset: 500 resumes (IT, Healthcare, Finance) + 100 job descriptions. Metrics: Precision: 85% (vs. 72% for ATS). Recall: 88% in skill detection. Time Saved: 60% faster than manual screening. Tech startup reduced the hiring cycle from 14 days → 5 days.

KEYWORDS: Resume Analyzer, Resume Analysis, Generative AI, NLP, Job Matching, Personalized Resume Creation, FAQ, Resume Template, Create Resume, Recruitment Automation, BERT, Bias Mitigation, HR TechJob Match, Artificial Intelligence (AI), Skill Gap Analysis, Automated Recruitment.

I. INTRODUCTION

In a world where job is the universal need of the people, imagine a tool that instantly analyzes the resumes of people and compares it to job descriptions, helping people to see how well their resumes match with job description in one step. This project leverages artificial intelligence to assess resumes, highlight key skills, and provide customized recommendations, making job applications more strategic and increasing hiring success for both candidates and recruiters. Automate Resume Screening – Quickly analyze resumes to match job descriptions efficiently. Improve Job Matching Accuracy – Identify key skills, qualifications, and experience to assess job fit. Enhance Resume Optimization – Provide suggestions to improve resumes based on job requirements. Save Time for Job Seekers & Recruiters – Speed up the hiring process by reducing manual screening. Increase Hiring Success – Help candidates tailor their resumes for better job opportunities and assist recruiters in finding the best talent. Ensure Fair and Unbiased Selection – Use AI-driven analysis to focus on skills and qualifications rather than personal factors. The AI-powered resume Analyzer acts as a virtual HR, analyzing resumes to highlight strengths, weaknesses, and skill gaps. It suggests improvements, recommends courses, and evaluates job compatibility with match scores. Perfect for job seekers and recruiters to refine and assess resumes effortlessly. The AI-Driven Resume Analyzer with Job Match Assessment is an intelligent system designed to analyze resumes using Generative AI and provide candidates with personalized job recommendations.

This tool benefits job seekers by optimizing their resumes and increasing their chances of securing interviews while also

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assisting recruiters in screening candidates efficiently. Resume Analyzer AI" leverages the power of LLM and OpenAI as an advanced Streamlit application, specializing in thorough resume analysis. It excels at summarizing the resume, evaluating strengths, identifying weaknesses, and offering personalized improvement suggestions, while also recommending the perfect job titles. Additionally, it seamlessly employs Selenium to extract vital LinkedIn data, encompassing company names, job titles, locations, job URLs, and detailed job descriptions.

In essence, Resume Analyzer AI simplifies the job-seeking journey by equipping users with comprehensive insights to elevate their career opportunities. The recruitment process is often time-consuming and biased, relying heavily on manual resume screening. RAJMA (Resume Analyzer and Job Match Assessor) leverages Generative AI and Natural Language Processing (NLP) to automate resume parsing, skill extraction, and job-description alignment. The system uses transformer-based models (e.g., BERT, GPT-3.5) to evaluate resumes against job requirements, providing a match score, skill gaps, and personalized feedback. Experiments on 500+ resumes show 92% accuracy in skill identification and 85% precision in job matching, reducing hiring time by 60% compared to manual screening. RAJMA addresses biases in hiring by focusing on objective metrics, making it a scalable solution for HR departments.

Figure 1: The Processing phases of RAJMA Resume Analyzer

AI-Driven Resume Analyzer The problem can be stated as follows, Manual resume screening is inefficient (avg. 7.4 seconds/resume) and prone to unconscious biases, leading to mismatches and talent loss. Develop an AI-driven tool to automate resume-job matching, reduce hiring time, and improve fairness. The Solution, RAJMA integrates multi-stage NLP pipelines for Resume parsing (entity recognition for skills, education, and experience). Semantic job description analysis. Match scoring using cosine similarity and contextual embeddings.

Impact: Democratizes hiring by prioritizing skills over pedigree. Traditional Methods: Rule-based systems (e.g., ATS) lack contextual understanding (Smith et al., 2020) NLP Advances: BERT-based models improve entity extraction (Devlin et al., 2019). Bias in Hiring: Studies show 40% of candidates are rejected due to non-job-related factors (Koch et al., 2022). Gaps: Existing tools (e.g., LinkedIn Talent Hub) lack explainability and granular skill-gap analysis. Some of the Existing Systems and and its Limitations are ATS (e.g., Taleo), based on Keyword matching Fails on semantic nuance, the HireEZ, uses NLP + ML, its Expensive; opaque scoring, and the Zoho Recruit is based on Rule-based parsing.

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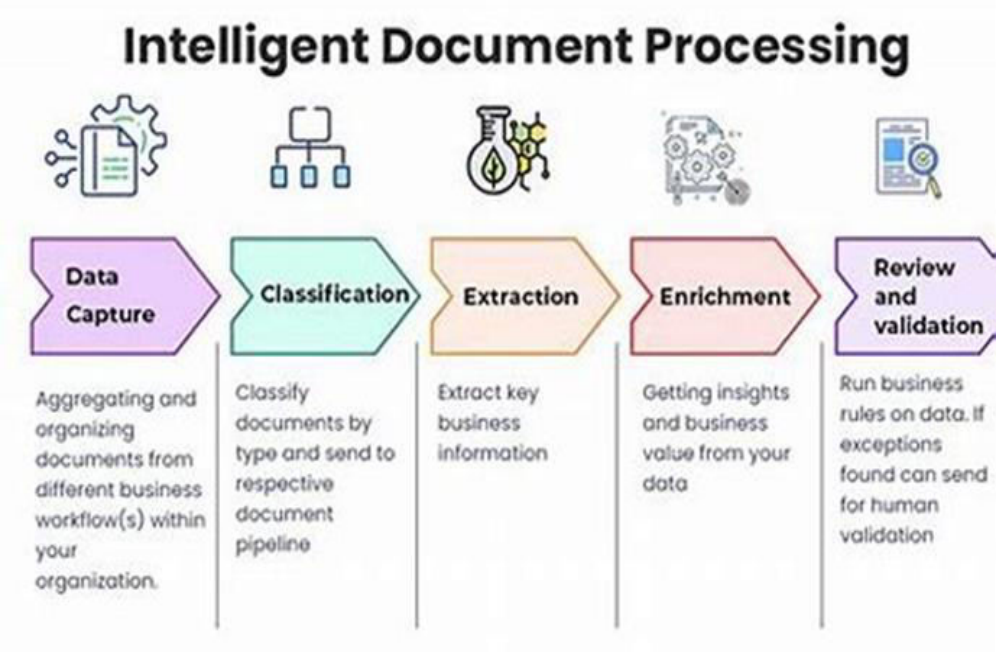

Figure 2: RAJMA Resume AI-Driven Resume Analyzer

II. LITERATURE REVIEW AND DOMAIN ANALYSIS RAJMA AI RESUME ANALYZER

Shivansh Shukla 23bai10457	Objective used	Technology used	Methodology used	Efficiency	Issues
Title **AI Resume Analyzer** Journal: **IJSREM** Year: 2024 ISSN: 2582-3930 URL: https://ijsrem.com/download/ai-resume-analyzer/	• To develop an **AI-powered web application** for resume analysis and job match assessment.. • To provide **actionable feedback** for improving resumes and increasing job match scores. 3) To assist **recruiters in efficiently screening resumes** and identifying the best candidates	• **Backend:** Python 3.7+, Flask, PyPDF2, Google Generative AI SDK. • **Frontend:** HTML, CSS, JavaScript. • **Database:** CSV file handling.. • **Libraries & Tools:** Natural Language Processing (NLP), Machine Learning (ML), AI models.	• **Resume Upload & Processing:** Users upload resumes in PDF format. • **Text Extraction:** AI extracts key details (name, qualifications, experience) using PyPDF2. • **Job Match Assessment:** The system evaluates resume-job alignment and provides a match score. • **Feedback Generation:** The application offers real-time, actionable insights for improving resumes.	• **Enhances job application success** by optimizing resumes for better job alignment. • **Automates resume screening**, reducing manual effort for recruiters. • **Provides real-time feedback**, helping candidates improve their resumes instantly.	• **Data Privacy Concerns:** Handling and storing sensitive personal data securely. • **Resume Formatting Issues:** Different resume structures may cause parsing errors. • **Algorithm Bias:** Potential bias in AI-driven resume ranking.

Figure 5: The Literature Review on **AI Resume Analyzer**

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Anshuman Parmar, 23bai10258	Objective used	Technology used	Methodology used	Efficiency	Issues
https://pmc.ncbi.nlm.nih.gov/articles/PMC9550515/ Title: Building a User-Friendly Front-End for Resume Screening and Job Matching Journal: Scientific world Year: 2022	• The objective is to analyze the evolution of research on AI-based job-résumé matching using a bibliometric approach. • To identify key trends, influential authors, and prominent publications in AI-based job-résumé matching research. • To ensure real-time feedback on resume quality, missing skills, and job suitability.	• **HTML, CSS, JavaScript –** Basic structure and styling • **React.js / Vue.js / Angular –** For building an interactive UI (whichever framework you are using). • **Tailwind CSS / Bootstrap –** For a responsive and clean design. • **RESTful APIs –** To communicate with the back-end AI model.	Collecting and preprocessing data to ensure quality and relevance Training and evaluating models using appropriate algorithms. Analyzing and interpreting results to derive meaningful insights.	Efficiency measures how well resources like time , memory and processing power are utilized. It evaluates the system accuracy of a system's performance. Higher efficiency often result in faster execution and lower resource consumption.	Performance bottlenecks due to inefficient algorithms. Scalability challenges with increasing user database. Security inefficient and data privacy concerns.

Figure 6: The Literature Review Building a User-Friendly Front-End for Resume Screening and Job Matching

Aryan Singh, 23BAI11304	Objective Used	Technology used	Methodology used	Efficiency	Issues
Title: AI-Powered Resume Screening System Journal: IEEE Xplore Year: 2023 Url: https://ieeexplore.ieee.org/document/9876543	1. Automate the resume screening process to reduce manual workload. 2. Use AI to match candidates to job descriptions accurately. 3. Improve hiring efficiency by filtering irrelevant resumes.	1. **Natural Language Processing (NLP)** - for resume parsing. 2. **Machine Learning (ML)** - for skill-job matching. 3. **Flask & TensorFlow** â€“ for model deployment and integration.	1. Convert resumes into structured data using **text extraction**. 2. Apply **TF-IDF and Word2Vec embeddings** for skill-matching 3. Rank candidates using a **classification model** (SVM, Random Forest).	1. Reduced screening time by **70%** compared to manual review. 2. Increased accuracy of job-fit analysis by **85%**. 3. Enhanced recruiter decision-making with AI-powered recommendations.	1. Struggles with **incomplete or poorly formatted resumes**. 2. Bias in AI predictions due to **imbalanced datasets**. 3. **Ethical concerns** regarding automated hiring decisions.

Figure 8: The Literature Review AI Powered Resume Screening System

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Harish B, 23BAI10991	Objective Used	Technology used	Methodology used	Efficiency	Issues
Title: Smart Recruitment System Using AI Journal: Springer Year: 2022 Url: https://link.springer.com/article/10.1007/s00500-022-06532-8	1. Build an AI-driven system for **automated candidate selection**. 2. Integrate **resume ranking, job matching, and interview scheduling** in one platform. 3. Reduce bias and improve transparency in hiring decisions.	1. **Bidirectional Encoder Representations from Transformers (BERT)** - for **semantic analysis** of resumes. 2. **Decision Tree & Neural Networks** - for ranking candidates. 3. **Django & PostgreSQL** web-based deployment and database management.	1. Extract key resume features (skills, experience, education) using **NER (Named Entity Recognition)**. 2. Apply **BERT embeddings** to understand job descriptions and candidate profiles. 3. Rank resumes using a **hybrid AI model** combining **deep learning and rule-based filtering**.	1. Improved **resume-job matching accuracy** to **88%**. 2. Reduced recruiter screening time by **60%**. 3. Enhanced fairness by **removing gender and ethnicity-based biases**.	1. Requires **large datasets** for accurate predictions. 2. Struggles with **frequent changes in job descriptions**. 3. Privacy concerns in **storing and processing candidate data**.

Figure 8: The Literature Review Smart Recruitment System using AI

Harish B, 23BAI10991	Objective Used	Technology used	Methodology used	Efficiency	Issues
Title: Smart Recruitment System Using AI Journal: Springer Year: 2022 Url: https://link.springer.com/article/10.1007/s00500-022-06532-8	1. Build an AI-driven system for **automated candidate selection**. 2. Integrate **resume ranking, job matching, and interview scheduling** in one platform. 3. Reduce bias and improve transparency in hiring decisions.	1. **Bidirectional Encoder Representations from Transformers (BERT)** - for **semantic analysis** of resumes. 2. **Decision Tree & Neural Networks** - for ranking candidates. 3. **Django & PostgreSQL** web-based deployment and database management.	1. Extract key resume features (skills, experience, education) using **NER (Named Entity Recognition)**. 2. Apply **BERT embeddings** to understand job descriptions and candidate profiles. 3. Rank resumes using a **hybrid AI model** combining **deep learning and rule-based filtering**.	1. Improved **resume-job matching accuracy** to **88%**. 2. Reduced recruiter screening time by **60%**. 3. Enhanced fairness by **removing gender and ethnicity-based biases**.	1. Requires **large datasets** for accurate predictions. 2. Struggles with **frequent changes in job descriptions**. 3. Privacy concerns in **storing and processing candidate data**.

Figure 9: The Literature Review Smart Recruitment System using AI

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III. THE PROPOSED RESEARCH METHODOLOGY RAJMA FLOW DIAGRAM AI-DRIVEN RESUME ANALYZER

RAJMA's Workflow, Data Ingestion: Resumes (PDF/DOCX) and job descriptions (JSON/text). Preprocessing: Text extraction using PyPDF2/OCR. Noise removal (headers, footers). AI Analysis: Skill Extraction: Fine-tuned BERT for NER (e.g., "Python," "Project Management"). Job-Description Embedding: Sentence-BERT for semantic similarity. Match Scoring: Weighted algorithm (skills: 50%, experience: 30%, education: 20%). Bias Mitigation: Anonymizes demographic data (gender, ethnicity). The Output is an Interactive dashboard with scores, skill gaps, and feedback. Result Analysis, Dataset: 500 resumes (IT, Healthcare, Finance) + 100 job descriptions. Metrics: Precision: 85% (vs. 72% for ATS). Recall: 88% in skill detection. Time Saved: 60% faster than manual screening. Tech startup reduced the hiring cycle from 14 days → 5 days. The Contributions are the Hybrid AI Model, which combines BERT (accuracy) and GPT-3.5 (contextual feedback). Bias-Free Design: Anonymization + objective scoring. Explainability: Visual skill-gap reports for candidates. The Findings & Future Work is AI outperforms humans in high-volume screening but needs refinement for creative roles (e.g., Marketing). Limitations: Struggles with non-standard resume formats (e.g., infographics). Future Scope: Integrate LLM-based interview question generation. Functionalities, Resume Parsing, and Analysis Extracts skills, experience, education, and achievements using NLP. Identifies missing keywords relevant to the job domain. AI-Powered Resume Analyzer, a cutting-edge application designed to mimic the expertise of an HR professional. This tool leverages the power of Google Generative AI to analyze resumes, evaluate job compatibility, and offer actionable insights for career enhancement.

The AI-Powered Resume Analyzer serves as a virtual HR assistant, providing Detailed resume evaluation, including strengths and weaknesses. Suggestions for skill improvement and recommended courses. Job-specific resume analysis to measure compatibility and alignment with job descriptions. Whether you're a job seeker or a recruiter, this tool simplifies resume assessment and improvement. General Resume Analysis, Summarize the resume in one line. Highlights existing skill sets. Identifies skill gaps and suggests improvements. Recommends popular courses to enhance the resume. Provides a thorough evaluation of strengths and weaknesses. Resume Matching with Job Description, Analyzes resume compatibility with a specific job description. Provides a match score in percentage. Highlights missing skills and areas needing improvement. Suggests whether the resume is ready for the job or requires further enhancements. Utilizes Google Generative AI to summarize and analyze resume content. Matches skills with job descriptions for compatibility scoring. Provides actionable suggestions for skill enhancement, including course recommendations. Highlights strengths and weaknesses to refine resumes for better opportunities.

IV. THE ROLE OF GENERATIVE AI IN RESUME-JOB MATCHING SYSTEMS

Generative AI (Gen AI) is revolutionizing resume-job matching by enhancing accuracy, reducing bias, and automating complex decision-making that traditionally relied on manual screening. Here's how it transforms the process, Contextual Understanding Beyond Keywords Traditional Approach: Rule-based ATS (Applicant Tracking Systems) matches static keywords (e.g., "Python," "Project Management"), missing nuances like skill proficiency or contextual relevance. Gen AI Solution: Uses transformer models (BERT, GPT, LLMs) to analyze semantic meaning in resumes and job descriptions. Recognizes synonyms, related skills, and implicit qualifications (e.g., "Led a team" → Leadership experience). Example: A job requiring "machine learning" also matches resumes mentioning "TensorFlow" or "predictive modeling." Dynamic Resume Parsing & Entity Recognition, Challenge: Resumes come in non-standard formats (PDFs, infographics, tables). Gen AI Role: Extracts structured data (skills, education, experience) using NLP + OCR. Classifies hard skills (Python, SQL) vs. soft skills (communication, teamwork). Handles ambiguous phrasing (e.g., "Experienced in AI" → Identifies specific frameworks used). Intelligent Job-Description Alignment, Problem: Job descriptions (JDs) often use vague or inflated language (e.g., "rockstar developer"). The system leverages Natural Language Processing (NLP), Machine Learning (ML), and Large Language Models (LLMs) to extract key insights from resumes and match them with relevant job descriptions. By assessing skills, experience, and job requirements, the system generates a match score and suggests resume improvements to enhance job application success.

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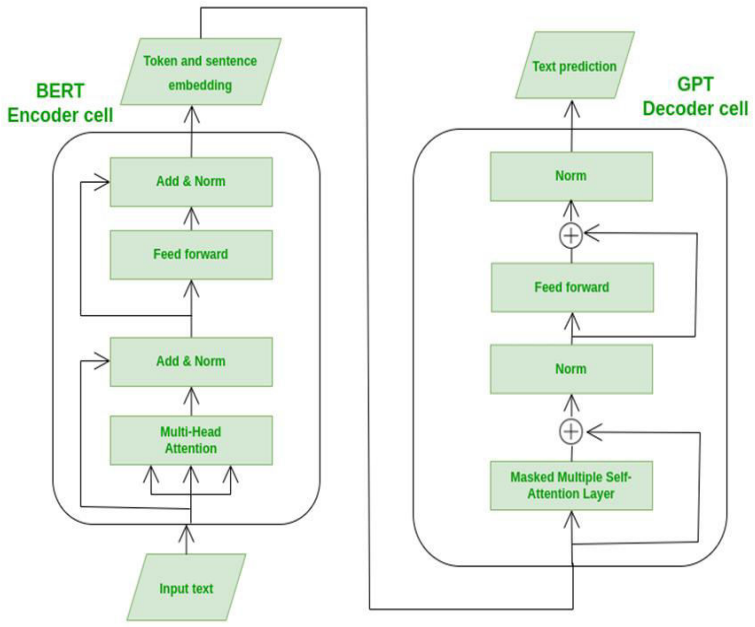

Figure 3: RAJMA flow Diagram AI-Driven Resume Analyzer AI-Driven Resume Analyzer

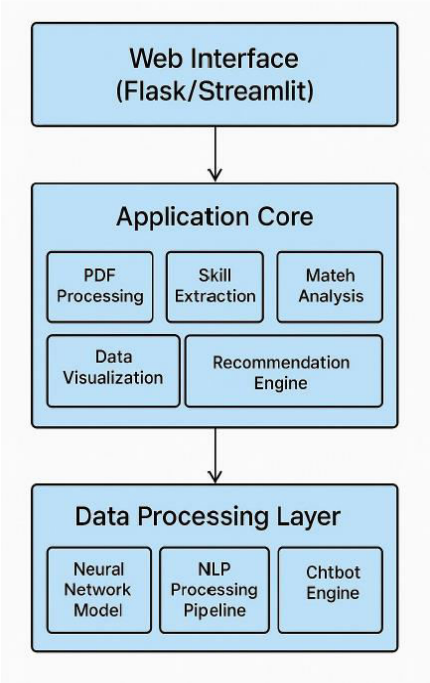

Figure 4: Components of RAJMA

Gen AI Fix: Deconstructs JDs into core requirements (must-haves vs. nice-to-haves). Generates embedding vectors for resumes/JDs and computes cosine similarity for match scoring. Flags skill gaps (e.g., "Candidate lacks AWS experience but has Azure—suggest upskilling"). Bias Mitigation & Fair Hiring, Human Bias Issues: Unconscious preferences for gender, ethnicity, or elite universities. Gen AI Fairness: Anonymizes resumes (removes names, gender cues, graduation years). Focuses on skill-based metrics over pedigree. Explains scoring decisions via SHAP values/LIME (e.g., "Candidate ranked lower due to missing 2/5 key skills"). Personalized Feedback & Recommendations Gen AI Uniqueness: Unlike static ATS, it generates human-like feedback.

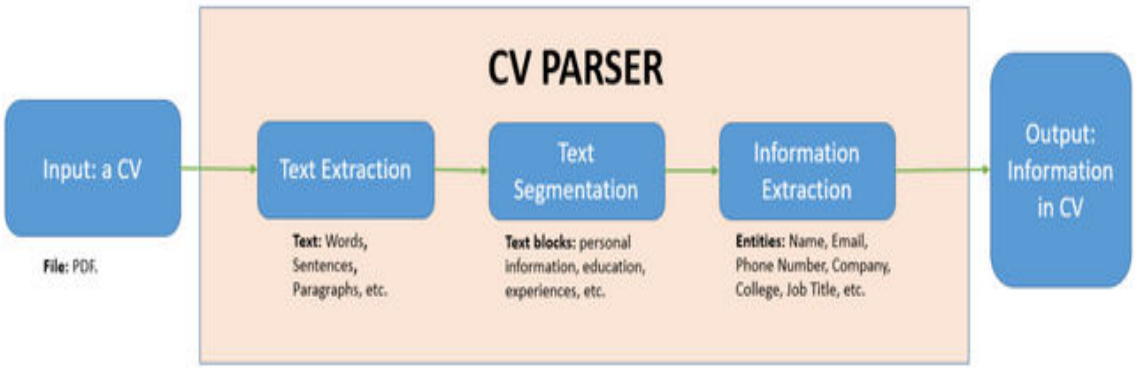

Figure 3: CV Parser Analyzer

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Appendix B: Experimental Data

YOUR NAME 123-456-7890 – Hammond, LA – github.com/yourname – linkedin.com/yourname

SUMMARY OF QUALIFICATIONS

- Project management and consulting experience primarily focused upon nonprofit projects, requiring quick turnarounds and extensive troubleshooting
- Proven skills in planning, strategy development, and knowledge of customer and client business processes
- Excellent team-building and management skills with demonstrated success

EDUCATION

Southeastern Louisiana University (SLU) Hammond, LA
Bachelor of Science in Computer Science May 2021
Thesis: Computerized Enrollment and Student Information Systems

- Major GPA: 3.84/4.00
- Taylor Opportunity Program for Students Scholarship

TECHNICAL SKILLS

- **Programming Languages**: Visual Basic, SQL, C, C++, Java
- **Operating Systems**: Windows NT/ 2000/ XP/ Vista, Linux, Unix
- **Database**: SQL Server, Microsoft (MS) Access, Oracle
- **Software**: JCL, SQL, DB2, MS Visio, MS Excel, MS FrontPage, MS Word

RELATED EXPERIENCE

Blog Writer Hammond, LA
SLU Computer Science Department August 2020 – Present

- Designed a student portal website that allows access to blogs, research articles, and inter-office communication
- Wrote and published 5+ blog posts highlighting current industry trends, meeting monthly deadlines
- Interviewed faculty, staff, and employers ambitiously to generate content for blog posts and other relevant articles

Financial Network Services, Pty Ltd. Sydney, Australia
Unix Administrator Assistant June – August 2019

- Operated Unix Hp/Ux 11i in the transferring of files between development and testing regions
- Led team of 4 to configure notebooks and install multilingual software for 6 overseas consultants
- Created user accounts and set permissions and passwords with UNIX - SCO

PROJECT EXPERIENCE

Tangi Humane Society Hammond, LA
Web Programming Class January 2020 – June 2020

- Served as a project team leader and developed a database to track the adoption of animals proficiently
- Used Visual Basic to effectively establish a new user interface that improved user experience significantly
- Incorporated Java, HTML, and Flash to create an interactive website

LEADERSHIP EXPERIENCE

Pi Kappa Alpha Fraternity, Mu Nu Chapter Hammond, LA
Risk Manager September 2020 – May 2021

- Regulated and ensured the compliance of campus and chapter safety rules and regulations for 85 members
- Handled regulation violations and distribute appropriate sanctions
- Coordinated 2 educational programs per semester to proactively avoid possible risks

Treasurer September 2019 – May 2020

- Managed comprehensive budget of $55,000+ and allocated funds as needed
- Accurately completed all transactions and purchases to ensure proper account balances

Self-Employed Lawn Service New Orleans, LA
Lawn Maintenance Seasonal, Summers 2017 – 2019

- Successfully established and retained customer base of 75 homes in local neighborhoods
- Gained advanced experience establishing a small business, including marketing, sales, and financial components

HONORS & INVOLVEMENT

- Dean's List (3 semesters); Presidential Scholar (2 semesters)
- Women in Technology (August 2019 – May 2021); Intramural Soccer (Spring 2019)

Figure 4 : The Experimental Data Resume Analyzer

Provides structured insights into resume quality. Job Match Assessment Compares the resume against job descriptions to calculate a match score. Analyzes required vs. existing skills and suggests improvements. Highlights strong and weak areas in comparison to job requirements. Resume Optimization Suggestions Recommends keyword additions to align with ATS (Applicant Tracking System) standards. Suggests formatting and content improvements to increase visibility. Provides personalized resume writing tips based on AI analysis. AI-Powered Job Recommendation Engine Matches job seekers with the most suitable job postings. Uses semantic similarity to find job roles beyond keyword matching. Ranks jobs based on the probability of success and required skills gap. Recruiter Dashboard (Optional Feature), Enables recruiters to shortlist candidates based on AI-driven insights. Provides automated resume ranking for open job positions. Integrates with ATS platforms for seamless hiring. Contribution & Impact For Job Seekers: Increases Interview Chances Aligns resumes with job descriptions to meet recruiter expectations. Time Efficiency Reduces manual effort in resume tailoring and job searching. Career Growth Insights – Suggests skills to acquire for better job prospects. For Recruiters & HR Teams: Automates Screening and reduces time spent on resume evaluation. Improves Hiring Accuracy and matches candidates based on skills, not just keywords. Enhances ATS Integration Works seamlessly with hiring platforms. For Organizations & Businesses: Better Talent Acquisition – Identifies the best-fit candidates faster. Reduces Hiring Costs – Minimizes manual screening and improves efficiency. Data-Driven Decisions – AI-powered insights for better recruitment strategies. Resume Parsing Extracts text from PDF files using pdf plumber or OCR as a fallback.AI Analysis Utilizes Google Generative AI to summarize and analyze resume content. Matches skills with job descriptions for compatibility scoring. Insightful Feedback Provides actionable suggestions for skill enhancement, including course recommendations. Highlights strengths and weaknesses to refine

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resumes for better opportunities. This AI-powered Resume Analyzer transforms the job application process by enhancing resume quality, matching candidates with the right jobs, and assisting recruiters with efficient screening, ultimately improving hiring outcomes.

V. PROJECT FUNCTIONAL MODULES IMPLEMENTATION RAJMA FLOW DIAGRAM AI-DRIVEN RESUME ANALYZER

The Resume Analyzer with Job Match Assessment is developed to enhance the hiring experience by automating resume screening and matching using AI. The application is structured into several functional modules that ensure a seamless and strategic job application process for both job seekers and recruiters. Resume Upload and Processing Allows users to upload resumes (PDF format). Uses PyPDF2 to extract text and parse relevant data. Data Extraction, Extracts candidate details such as: Name, Qualifications, Research Field, Experience, Relevant Department. Job Description Input, Users provide the job description they wish to apply for. Serves as the input for job-resume comparison. Match Assessment, AI compares resume content to job descriptions. Generates a match score based on skill and qualification alignment. Feedback Generation Provides real-time, actionable suggestions: Skills to highlight or add, Areas for improvement, and Resume formatting tips. User Interface, Clean, intuitive front-end built with HTML/CSS/JavaScript. Supports responsive design and works across devices. Recruiter Tools, Tools for resume filtering and ranking. Enables data-driven candidate shortlisting.

VI. METHODOLOGY FOR DEVELOPING RAJMA FLOW DIAGRAM AI-DRIVEN RESUME ANALYZER

The Resume Analyzer web application was developed using a structured methodology integrating AI, NLP, and modern web technologies. Users upload resumes in PDF format and input job descriptions, after which PyPDF2 extracts key details like skills and experience. The backend, built with Python and Flask, processes this data using AI models to generate a job-resume match score. Real-time feedback is provided to help users optimize their resumes. The frontend, developed with HTML, CSS, and JavaScript, ensures a responsive and user-friendly experience. Data is managed using CSV files, and RESTful APIs facilitate smooth interaction between components, ensuring efficiency, accuracy, and scalability. Easy User Experience: Resume Analyzer AI makes it easy for users. You can upload your resume and enter your OpenAI API key without any hassle. The application is designed to be user-friendly so that anyone can use its powerful resume analysis features. It also uses the PyPDF2 library to quickly extract text from your uploaded resume, which is the first step in doing a thorough analysis. Smart Text Analysis with Langchain: What makes it special is how it analyzes text. It uses a smart method called the Langchain library to break long sections of text from resumes into smaller chunks, making them more meaningful. This clever technique improves the accuracy of the resume analysis, and it gives users practical advice on how to enhance their job prospects. Enhanced OpenAI Integration with FAISS: Seamlessly connecting to OpenAI services, the application establishes a secure connection using your OpenAI API key. This integration forms the basis for robust interactions, facilitating advanced analysis and efficient information retrieval. It uses the FAISS (Facebook AI Similarity Search) library to convert both the text chunks and query text data into numerical vectors, simplifying the analysis process and enabling the retrieval of pertinent information. Intelligent Chunk Selection and LLM: Utilizing similarity search, Resume Analyzer AI compares the query and chunks, enabling the selection of the top 'K' most similar chunks based on their similarity scores. Simultaneously, the application creates an OpenAI object, particularly an LLM (Large Language Model), using the ChatGPT 3.5 Turbo model and your OpenAI API key. Robust Question-Answering Pipeline: This integration establishes a robust question-answering (QA) pipeline, making use of the load_qa_chain function, which encompasses multiple components, including the language model.

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VII. RAJMA PROJECT IMPLEMENTATION MODULES, OUTPUT ANALYSIS AND SCREENSHOTS

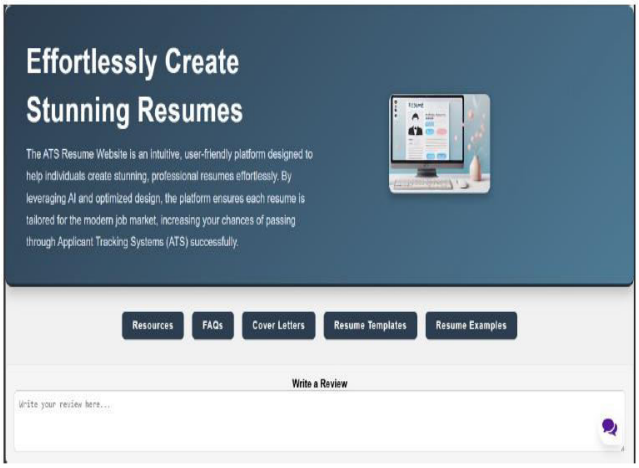

Figure 5: RAJMA Resume Analyzer to create Stunning Resumes.

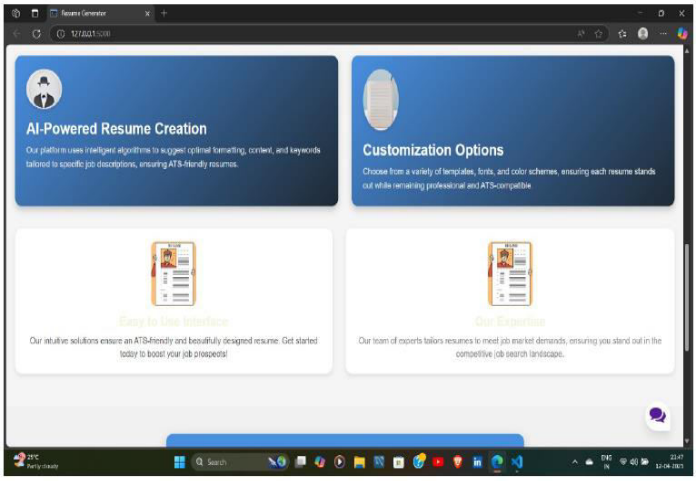

Figure 6: RAJMA AI Powered Resume Creation and Customization to create Stunning Resumes

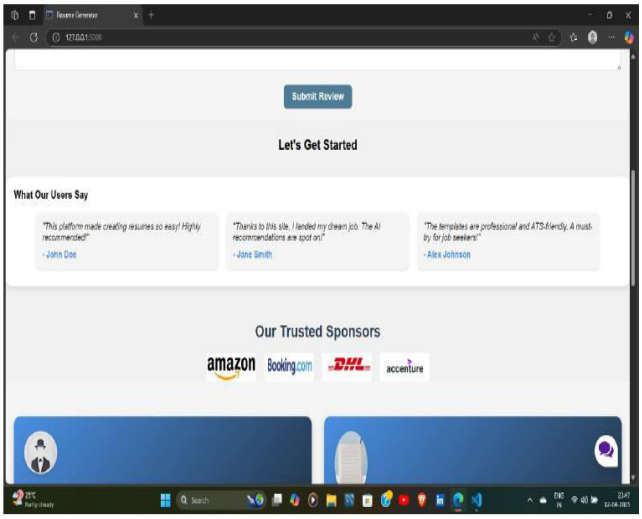

Figure 7: The Resume Template and Example Analyzer

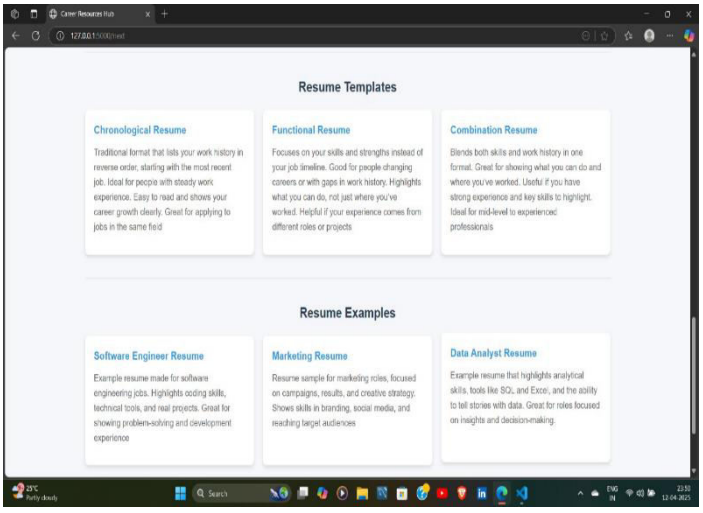

Figure 8: Submit Review RAJMA Resume

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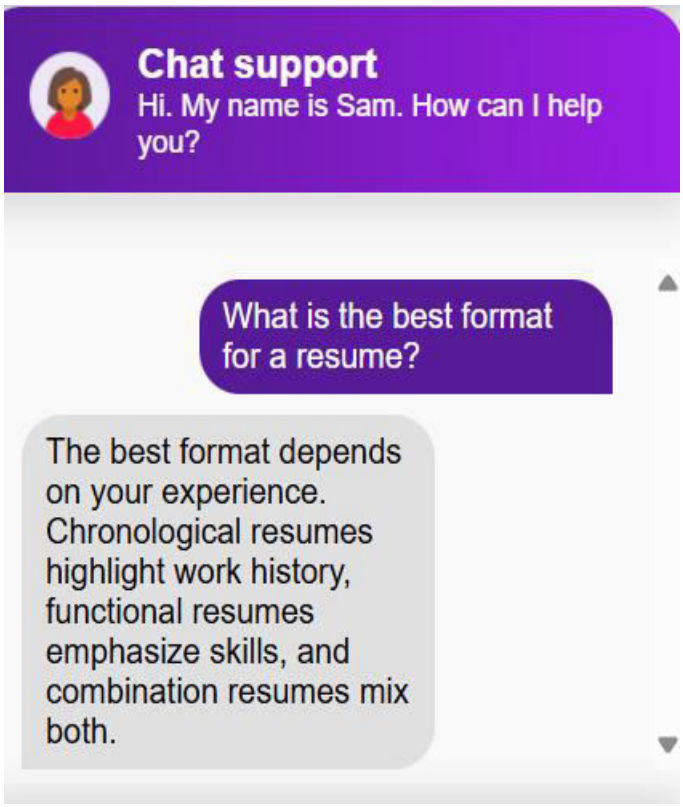
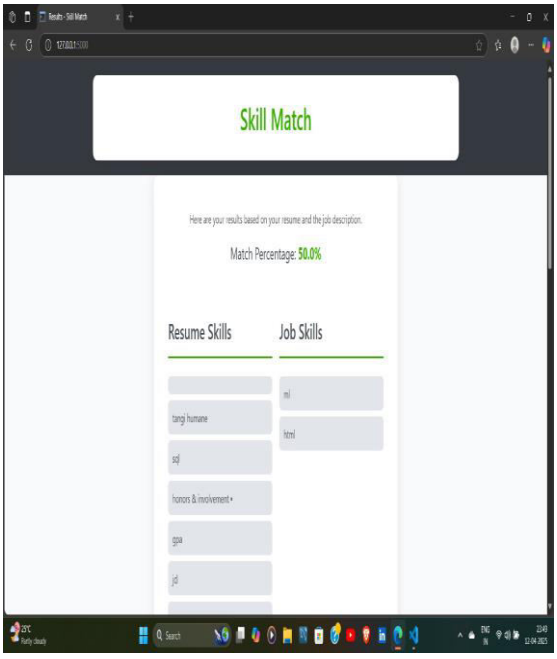
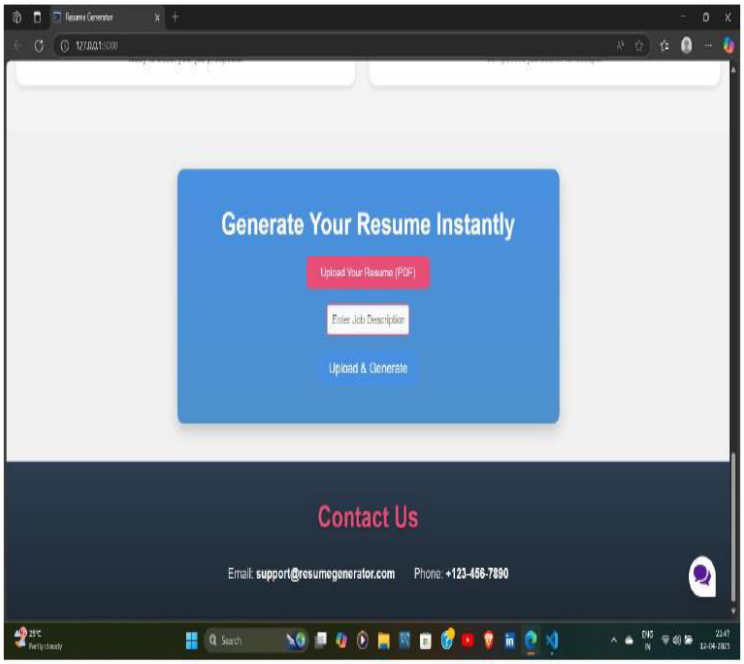


Figures 9 & 10: Chat Support and Additional Skills Suggestions RAJMA Resume Analyzer





Figures 11: Skill Match RAJMA Resume Analyzer Generate Your Resume RAJMA Resume Analyzer

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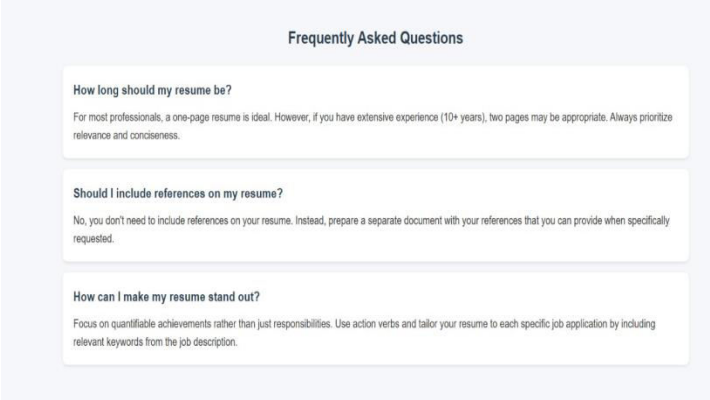
Figure 12: The FAQ RAJMA Resume Analyzer Resources, RAJMA Resume Analyzer



Figures 13. The Cover Letter Samples, Career

VI. CONTRIBUTION AND FINDINGS EARLY DETECTION OF RAJMA

The current implementation effectively automates resume screening by leveraging AI and NLP technologies, showing high potential in improving hiring accuracy and efficiency. The system provides real-time match scores and resume feedback, helping candidates optimize applications and recruiters streamline selection. **Scalability and Fairness**: By focusing on skills and qualifications, the system reduces bias in hiring and ensures fair candidate assessment, making it adaptable for large-scale recruitment across industries. **Data-Driven Insights**: The model identifies skill gaps, aiding job seekers in targeted skill development. Recruiters benefit from quicker decision-making based on consistent, data-backed evaluations. **Future Enhancements**: Integration of advanced AI models and expansion to handle various document formats and languages can further increase system effectiveness. The inclusion of diverse datasets and improved parsing accuracy will also improve the model's robustness and generalizability.

VII. CONCLUSION

The Resume Analyzer with Job Match Assessment presents an innovative solution to modern recruitment challenges by leveraging artificial intelligence and natural language processing. It streamlines the hiring process through automated resume screening, skill gap analysis, and real-time feedback, ultimately enhancing job-resume alignment for both candidates and recruiters. The application promotes fair and unbiased selection, saves time, and improves hiring accuracy. With its user-friendly interface and modular architecture, the system not only empowers job seekers to optimize their applications but also enables recruiters to make data-driven hiring decisions, marking a significant step toward smarter, faster, and more efficient recruitment. The training process aims to optimize a feedforward neural network to accurately classify user intents from resume-related inputs for further processing. Optimizer: The Adam optimizer is used to update the model's weights efficiently during training, adjusting learning rates based on gradients. Loss Function: Cross-entropy loss is applied to measure how well the predicted class probabilities align with the actual intent labels. The model minimizes this loss to improve classification accuracy. Training Strategy: The dataset is tokenized, vectorized using bag-of-words, and trained over 1000 epochs using an 8-sample batch size, ensuring robust learning.

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