

Acropolis Institute of Technology & Research

Department of IT CSE (DS)

Synopsis

Of

Resume Screening System

1. Introduction

1.1 Overview

1.1.1 Purpose and Functionality: The Resume Screening System is a comprehensive tool designed to assist job candidates in enhancing the quality and relevance of their resumes by analyzing them against specific job descriptions. It identifies missing keywords, necessary hard and soft skills, and critical sections such as contact details, summaries, and work experience.

1.1.2. Optimization Goals: The primary objective is to help candidates optimize their resumes for better alignment with job requirements, ultimately improving their chances of being noticed by recruiters and successfully passing through applicant tracking systems (ATS).

1.1.3. General Resume Writing Advice: In addition to job-specific optimization, the system provides general advice on best practices for resume writing. This includes tips on formatting, structuring, and presenting information clearly and concisely, such as using bullet points for achievements, keeping the resume length to one or two pages, and avoiding jargon.

1.1.4. Feedback and Insights: The system offers detailed feedback, actionable suggestions, and insights into how well a resume matches job descriptions, helping candidates tailor their resumes to meet specific requirements and improve their likelihood of passing initial employer screening stages.

1.1.5. Identifying Gaps and Improvements: By identifying gaps and areas for improvement, the system highlights missing keywords commonly found in job descriptions, suggests rephrasing sections to align with industry standards, and recommends including specific skills or experiences that are highly valued by employers, making it an indispensable resource for job seekers.

1.2 Purpose

1.2.1 Streamlined Resume Tailoring: The project helps job seekers tailor their resumes to better match employer qualifications by highlighting missing skills and keywords, enhancing their chances of being shortlisted.

1.2.2 Interview Preparation: The system suggests potential interview questions based on the job description, providing a comprehensive preparation tool for applicants.

1.2.3 Advanced Analysis: Utilizing advanced algorithms and machine learning, the system scans resumes against predefined criteria (keywords, qualifications, experience, skills) and provides feedback on areas for improvement.

1.2.4 Gap Identification: It identifies gaps in resumes by highlighting missing keywords, suggesting rephrasing to meet industry standards, and recommending the inclusion of valued skills or experiences, thereby helping candidates present a more compelling profile.

1.2.5 Targeted Job Applications: The system offers insights on how well a resume matches specific job descriptions, allowing candidates to adjust their applications for different positions, which demonstrates their understanding of job requirements and increases interview chances.

2. Literature Survey

S.No.	Name of solutions	Features	Limitations/drawbacks
1	Modern Resume Analyser For Students And Organisations	Aims to enhance the efficiency of candidate screening and selection processes	Potential introduction of biases or the oversight of unconventional qualifications or experience

2	Applicant Helper System for Resume Using Python And NLP	System aims to extract relevant information such as skills, experiences, and qualifications	System's performance degradation with poorly formatted or misspelled terms
3	Resume Classification and Ranking using KNN and Cosine Similarity	The similarity of features between resumes to classify and rank them based on their proximity	Computational intensity for large datasets, sensitivity to noisy or irrelevant features, and the need for careful parameter selection

2.1 Proposed Solution:

The proposed solution is a candidate-centric system that not only analyzes resumes but also offers suggestions for improvements. The system will calculate the match percentage, identify missing skills and keywords, and tell how to improve the resume. It helps candidates actively refine their resumes and prepare for interviews, offering personalized and actionable recommendations in real-time. Our Resume Screening System offers: 1. Comprehensive analysis and real-time feedback 2. Percentage match for job description alignment 3. Actionable improvement recommendations 4. Real-time updates for iterative resume refinement 5. Missing keywords identification for enhanced alignment

3. Theoretical Analysis

3.1 Block Diagram:

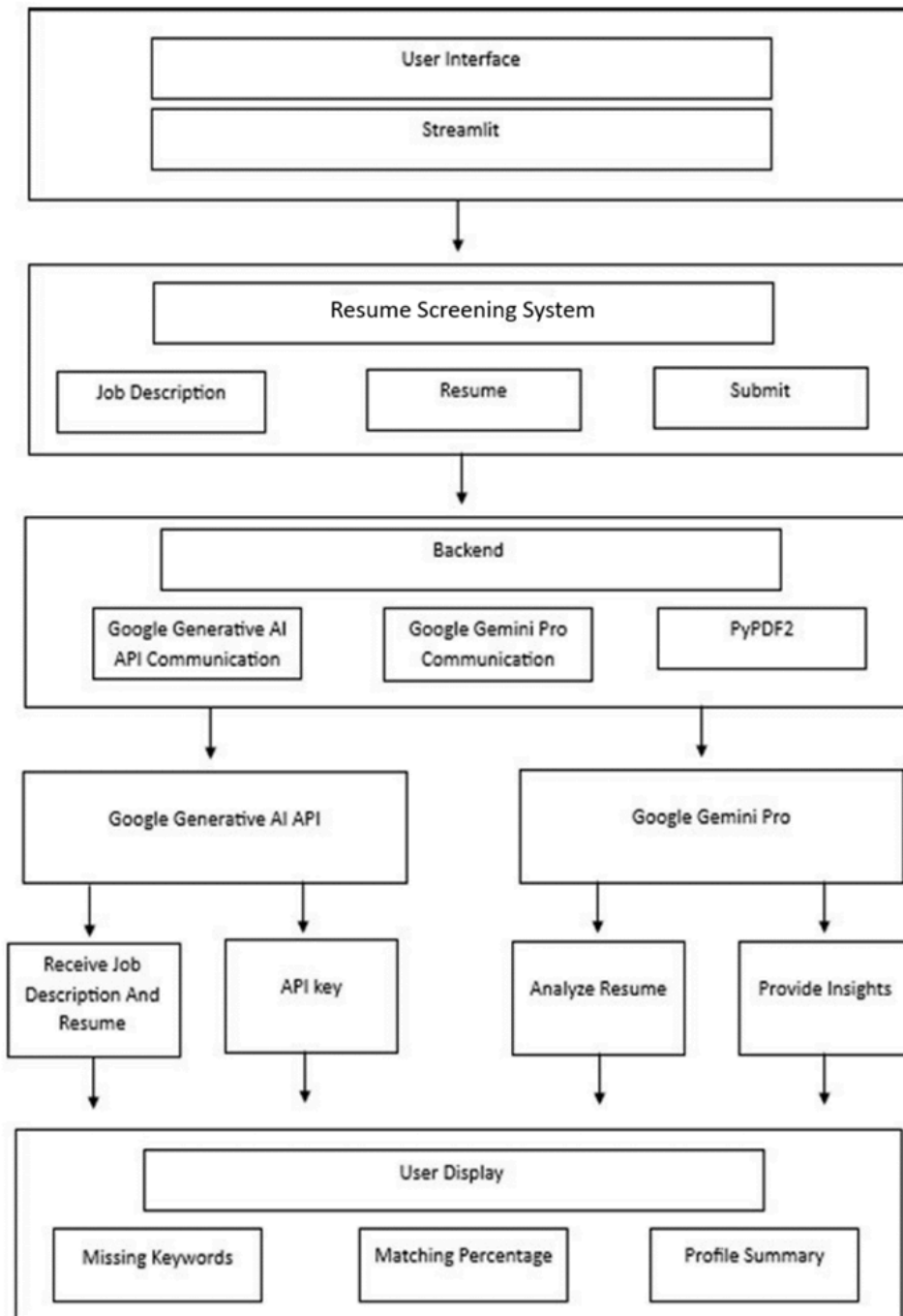


Fig.1. Block Diagram of Resume Screening System

Hardware/Software Designing

- **Hardware Requirements:** Standard computing device with internet access.
- **Software Requirements:**
 - Programming Language: Python
 - Framework: Streamlit (for creating the web interface)
 - Libraries: pypdf2(to read the uploaded docs)
 - Generative AI from Google (for processing and generating insights from resumes)
 - APIs and Services: Google Generative AI API: Used for AI-based resume analysis and matching candidates with job descriptions
 - Google gemini pro: For communication between the front-end (Streamlit interface), back-end, and database
 - Database: SQL or NoSQL (like MySQL or MongoDB) for storing resumes, candidate profiles, and job descriptions

4. Applications

This Resume Screening System can be applied in several areas, including:

4.1 Corporate Job Portals: Large companies with high volumes of applications use ATS to filter resumes.

4.2 Interactive Guidance: Career coaches and platforms can integrate this system to provide detailed, personalized guidance to job seekers.

4.3 Career Services at Universities: Many universities offer resume screening tools as part of their career services.

4.4 Internal Job Mobility: Companies can use this system for internal job postings.

4.5 Campus Recruitment: Universities and companies conducting campus recruitment drives to hire fresh graduates.

4.6 Talent Acquisition for Specialized Roles: Industries requiring highly specialized skills use these systems to ensure candidates meet specific qualifications and experience criteria.

4.7 Volunteer Organizations: Nonprofits or volunteer organizations that receive a large number of applications for volunteer positions can use a resume screening system to match candidates with roles that align with their skills and experiences.

5. REFERENCE

5.1 Conference Paper

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2. Prof. P.R. Kulkarni, Yash Vaidya, Akshad Shelare, Narayan Attarde, Meet Sali, "Resume Parser Using ML and NLP", International Research Journal of Modernization in Engineering Technology and Science (IRJMETS), 2023.
3. S Bharadwaj, Rudra Varun, Potukuchi Sreeram Aditya, Macherla Nikhil, G. Charles Babu, "Resume Screening Using NLP And LSTM", 2022 International Conference on Inventive Computation Technologies (ICICT), 2022.
4. Varsha Tiwari, Prof. Sapna Jain Choudhary, "Intelligent Hiring with Resume Parser and Ranking Using Machine Learning and Natural Language Processing", International Journal of Advanced Technology & Engineering Research (IJATER), 2021.

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Repository Link: <https://github.com/Lavish-Verma/Resume-Screening-System.git>