

AI-Based Resume Screening and Candidate Recommendation System

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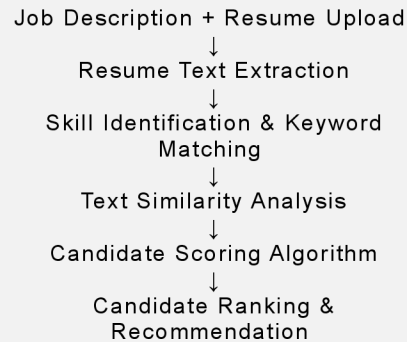
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PROBLEM

Recruiters often receive hundreds of resumes for a single job opening, making manual screening slow and inefficient. Many qualified candidates are overlooked because recruiters can't review every resume carefully.

SYSTEM DESIGN



VERIFICATION

The system is tested by uploading sample resumes and comparing outputs across different job descriptions

- Accurate text extractions
- Correct response formatting
- Scoring and ranking of candidates
- Proper handling of errors

CURRENT SYSTEM

- Manual resume review by recruiters
- Applicant Tracking Systems (ATS) filter resumes by keywords
- Background verification of candidate information
 - Qualified candidates proceed to interviews and skill assessments

OBJECT DESIGN

- Resume**
stores uploaded file and extracted text
- Job Description**
stores job requirements and selected roles
- Candidate**
represents each applicant and their evaluation
- Evaluation**
stores score, skills, strengths, and recommendations
- Session History**
tracks previous screening results
- System Controller**
handles processing and workflow

SUMMARY

This project presents an AI-based resume screening system that automates candidate evaluation and ranking. By leveraging natural language processing and AI-driven analysis, the system improves efficiency, reduces manual effort, and helps recruiters identify the most qualified candidates more effectively.

REQUIREMENTS

- Upload PDF resumes
- Input a job description
- Extract text from resumes automatically
- Identify relevant keywords and skills
- Calculate the similarity score between the resume and the job description
- Display candidate match percentage
- Show matched skills and keywords
- Rank candidates based on relevance
- Store the session history of past screenings

IMPLEMENTATION

The system is implemented as a Flask-based web application

Users can upload multiple PDF resumes and either input or select a predefined job description

The system extracts resume text and sends it to an AI model via the Anthropic API for evaluation

The AI analyzes each candidate's experience, skills, and alignment with the job description, then returns structured results including scores, strengths, gaps, and hiring recommendations

Results are sorted and displayed in a ranked format, with session history maintained for recent screenings

REFERENCES

- Anthropic (2024) – Claude API Documentation
- Dillahunt et al. (2021) – AI Resume Screening Challenges
- Lin et al. (2023) – LLMs for Resume Evaluation
- Abhishek et al. (2025) – AI-Driven Resume Screening
- Rojas-Galeano et al. (2022) – NLP for Resume Matching

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