Synopsis

AI-Powered Resume Analyzer

Final Year Project

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Introduction

The AI Resume Analyzer is a cutting-edge tool that leverages Artificial Intelligence (AI) and Natural Language Processing (NLP) to optimize resumes for job seekers. It automates the process of resume screening and enhancement, providing actionable insights and recommendations to improve resume quality, relevance, and alignment with job descriptions.

Existing System

Currently, manual resume evaluation dominates the recruitment process, involving HR professionals and recruiters who assess resumes for relevant qualifications, skills, and job suitability. In some cases, Applicant Tracking Systems (ATS) are employed but are limited to keyword matching and lack detailed analysis and suggestions.

Problems in Existing System

- Time-Consuming: Manual evaluation is slow and inefficient for large applicant pools.
- Limited Insight: Existing ATS systems focus only on keyword matching without providing actionable feedback.
- Subjective Evaluations: Human bias may affect decision-making, leading to unfair evaluations.
- Lack of Personalization: No direct suggestions for candidates to improve their resumes or enhance job compatibility.

Hardware and Software Requirements

Hardware Requirements:

- Processor: Intel Core i5 or higher
- RAM: 8 GB or higher
- Storage: 20 GB available disk space

Software Requirements:

- Operating System: Windows/Linux/MacOS
- Programming Languages: Python
- Frameworks: Flask/Django
- Libraries: SpaCy, NLTK, Scikit-learn, TensorFlow/PyTorch, PyPDF2
- Database: MySQL or MongoDB
- Tools: GitHub, IDEs like PyCharm

Feasibility Study

- Technical Feasibility: The project utilizes mature NLP and AI libraries that are well-documented and supported, ensuring technical feasibility.
- Economic Feasibility: The system reduces costs for recruiters by automating time-intensive resume screening, making it economically viable.
- Operational Feasibility: The user-friendly interface

ensures ease of adoption by both job seekers and recruiters.

Scope (Functions/Models)

- Resume Parsing: Extract information such as personal details, education, skills, and experience.
- Keyword Matching: Compare resume keywords with job descriptions to determine relevance.
- Skill Categorization: Group skills into technical, managerial, and soft skills.
- Resume Scoring: Provide compatibility scores based on job descriptions.
- Recommendations: Suggest improvements like skill additions or better formatting.
- Analytics Dashboard: Visualize key insights on resume content and relevance.

Users

1. Job Seekers (Customers):

- Upload resumes for analysis.
- Receive feedback and recommendations to improve resume quality.

2. Admin (Recruiters/HR):

- Access detailed resume analytics and compatibility scores.
- Automate shortlisting based on job-specific requirements.

GUI and Connectivity

Graphical User Interface:

- A simple and intuitive interface with options to upload resumes in various formats (PDF, Word).
- Visual representation of keyword density, skill categorization, and resume scoring.
- Easy navigation for users to access recommendations and analytics.

Connectivity:

- Integrated with databases to store user data and analysis results.
- Cloud-based services for real-time job description comparison.
- APIs for seamless integration with job portals and recruitment platforms.