

Internship on AI Transformative Learning with TechSaksham

AI-powered Resume Screening and Ranking System

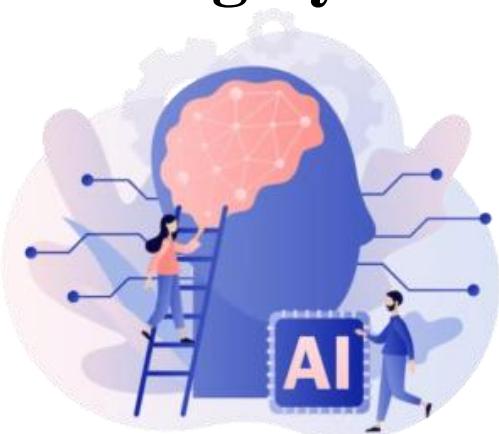
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Introduction

- **Challenges in Traditional Screening:**

- Manual resume review is slow and inefficient.
- High volume of applications leads to delays.
- Risk of human bias in candidate selection.

- **AI-powered Optimization:**

- Automates resume parsing and ranking.
- Enhances accuracy and efficiency in shortlisting.
- Ensures fair and unbiased candidate evaluation.

Objectives

Automate Resume Screening

Reduce manual effort and speed up candidate evaluation.

Rank Candidates Based on Job Relevance

AI-driven scoring for better hiring decisions.

Improve Efficiency & Reduce Bias

Streamline hiring while ensuring fair selection.



Scope and Tech-stack of the project

- Scope of the Project

- Accept resumes in multiple formats (**PDF, DOCX, etc.**)
- Extract and analyze key details (**skills, experience, education**)
- Rank candidates using **AI-based scoring**
- Provide a **recruiter dashboard** with insights

- Technology Stack

Frontend: Built with Streamlit

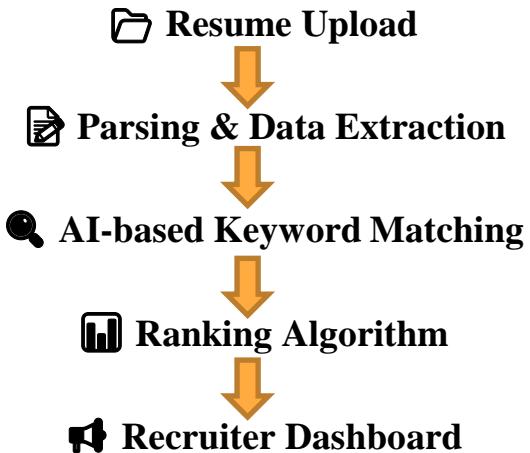
Backend: Python for backend processing

AI & NLP: Implemented scikit-learn and NLTK for NLP and machine learning

Resume Parsing: PyPDF2 for extracting data from resumes

System Architecture and Key Features

- System Architecture



- Key Features

- Resume Parsing & Keyword Extraction** – Extracts candidate details efficiently.
- AI-based Candidate Scoring** – Ranks resumes based on job relevance.
- Recruiter Dashboard for Insights** – Provides a user-friendly interface for decision-making.
- Bias Reduction Mechanisms** – Ensures fair and unbiased hiring.

Methodology

- ◊ **Data Collection:**

Gather resumes and job descriptions for AI training.

- ◊ **Preprocessing:**

Tokenization, Named Entity Recognition (NER), and data cleaning.

- ◊ **Model Training:**

Train an AI-based ranking algorithm using machine learning.

- ◊ **Evaluation & Testing:**

Measure accuracy, fairness, and performance through validation.



Challenges & Solutions

- **Data Inconsistency**

NLP-based normalization techniques ensure structured data.

- **Bias in AI Models**

Implementing fairness algorithms minimizes discrimination.

- **Handling Various Formats**

Robust document processing libraries improve compatibility.

- **Scalability Issues**

Cloud-based architecture enhances system performance.

- **Privacy Concerns**

Secure encryption and data anonymization protect candidate information.

Conclusion & Future Enhancements

- Conclusion

The AI-powered Resume Screening and Ranking System significantly enhances the recruitment process by automating resume evaluation, reducing manual effort, and ensuring unbiased candidate selection. By leveraging AI and NLP, recruiters can efficiently shortlist top candidates, saving time and improving hiring accuracy.

- Future Enhancements:

- ✓ **Chatbot Integration** – AI-driven candidate interactions.
- ✓ **Multilingual Support** – Process resumes in multiple languages.
- ✓ **Real-time Analytics** – Insights into hiring trends and efficiency.

THANK YOU