Resume Screening & Matching AI Agent

- Project Report

Date: June 06, 2025

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Problem Statement

Recruiters receive hundreds of resumes for every job posting. Manually screening them to find the most suitable candidates is time-consuming and inefficient. This project aims to automate the resume screening process by using natural language processing (NLP) to compare resumes to a job description and rank them based on semantic similarity.

Tools and Libraries Used

- Python
- Google Colab
- sentence-transformers
- pandas
- numpy
- scikit-learn

Working Explanation

The AI agent takes a job description and a set of candidate resumes as input. Using the SentenceTransformer model ('all-MiniLM-L6-v2'), it converts the text into dense vector embeddings. Cosine similarity is computed between the job description vector and each resume vector to measure match quality. Resumes are then ranked in descending order of similarity score, making it easy to identify top candidates.

How to Use the Code

1. Define a job description and a list of candidate resumes in the script.
2. The model converts the job and resumes into vector form.
3. Cosine similarity scores are calculated.
4. The resumes are displayed in order of their relevance to the job.
5. The code runs efficiently on Google Colab.

Conclusion

This project demonstrates an efficient way to use AI for resume screening. It improves recruitment speed and accuracy, reducing manual workload while maintaining fairness.