AI Resume Analyzer (AI Agent)

Abstract

The AI Resume Analyzer is an intelligent AI agent designed to automatically analyze, evaluate, and rank resumes based on job descriptions. It helps recruiters and HR teams reduce manual screening time by using Natural Language Processing (NLP) and Machine Learning (ML) techniques.

Objectives

1. Automate resume screening process
2. Match candidate skills with job requirements
3. Reduce hiring time and human bias
4. Provide intelligent ranking and feedback

Key Features

1. Resume parsing (PDF/DOCX)
2. Job description analysis
3. Skill extraction using NLP
4. Resume ranking and scoring
5. AI-based recommendations

System Architecture

The system consists of a user interface for uploading resumes, an AI agent that performs text preprocessing and analysis, a machine learning model for matching skills, and a database to store resumes and results.

Technologies Used

1. Python
2. Natural Language Processing (spaCy / NLTK)
3. Machine Learning
4. Flask / Streamlit (Frontend)
5. GitHub for version control

Workflow

1. User uploads resume and job description
2. AI agent extracts text and skills
3. Resume is matched with job requirements
4. Score and ranking are generated
5. Results are displayed to the user

Applications

1. Recruitment and HR systems

2   College placement cells
3   Online job portals

Future Enhancements

1   Integration with LinkedIn and job portals
2   Advanced deep learning models
3   Multi-language resume support
4   Bias detection and fairness analysis

This AI Resume Analyzer AI Agent can be extended as a full-scale intelligent recruitment assistant.