Resume Parser Using NLP

Table of Contents

Overview

The **Resume NLP Parser** revolutionizes the recruitment process by employing sophisticated Natural Language Processing (NLP) techniques. This tool efficiently extracts, analyzes, and visualizes data from resumes, enabling data-driven decision-making in hiring. Tailored for both candidates and recruiters, it enhances the application experience by parsing resumes comprehensively and offering powerful insights.

Key Features

- **Comprehensive Resume Parsing**: Extracts detailed information including contact details, skills, work experience, and educational background from resumes in PDF formats.

- **Advanced NLP Analysis**: Utilizes leading-edge NLP libraries such as NLTK and spaCy to delve into resume text, identifying keywords, phrases, and patterns to evaluate candidates' qualifications comprehensively.

- **Intuitive Data Visualization**: Presents parsed data through interactive visualizations, empowering recruiters with efficient insights into applicants' profiles.

- **Robust Search and Filtering**: Offers powerful search and filtering functionalities, enabling swift access to specific candidate information.

Technologies Used

The project leverages the following technologies and tools:

- **Python**: Primary programming language for NLP, data analysis, and backend functionalities.
- **NLP Libraries**: Utilizes NLTK and spaCy for text analysis, named entity recognition (NER), and text parsing.
- **Web Interface**: Employs Streamlit to create a user-friendly web-based interface for seamless user interaction.
- **Data Visualization**: Utilizes Matplotlib and Plotly for generating informative and interactive visualizations.
- **Database Management**: Utilizes SQLite for efficiently managing and querying resume data.

- **Model Training**: Incorporates spaCy's NER pipeline for training models on customized data for skill extraction.

How to Run the Application

To run the Resume NLP Parser:

1. Clone this repository to your local machine and `cd` into the project directory.

   ```
   git@github.com:Deep4GB/Resume-NLP-Parser.git
   cd Resume-NLP-Parser
   ```

2. Set up a Python environment with necessary dependencies listed in `requirements.txt`.

   ```
   pip install -r requirements.txt
   ```

3. Run the application using Streamlit:

   ```
   streamlit run main.py
   ```

4. Upload resumes and explore the parsed data using the application's functionalities.

Functionalities

User

The User section allows individuals to upload their resumes. The system then extracts and displays parsed information, showcasing extracted details such as skills, work experience, education, and contact information.

Recruiters

Recruiters can upload multiple resumes and specify desired skills. The system performs skill-based searching across the resumes, presenting the findings in a structured format for better evaluation.

Feedback

This section enables users to provide feedback, suggestions, or improvements for the system's enhancement. Users can share their thoughts on improving parsing accuracy, user interface, or additional functionalities.

Admin

Admins have privileged access, requiring authentication to access this section. They can review uploaded resumes, manage feedback received from users, and download uploaded resumes for further analysis or archiving.

Future Enhancements

In the pipeline for this project are several enhancements:

- **Machine Learning Integration**: Integrate machine learning algorithms to enhance resume analysis and categorization.

- **Customization Features**: Offer customization options for tailoring parsing algorithms to specific job roles or industries.
- **Database Integration and Management**: Implement a more robust database system for long-term storage and efficient data retrieval.

Team

- **Darsh Patel**: GitHub Profile
- **Dev Patel**: GitHub Profile
- **Deep Patel**: GitHub Profile
- **Dravya Patel**: GitHub Profile