**AI-Powered Resume Ranker: -**

**Internship Project Report**

**Introduction**

The process of reviewing and shortlisting resumes is one of the most time-consuming parts of recruitment. Companies often receive hundreds of applications for a single position, making it difficult for HR teams to manually identify the most suitable candidates. The **AI-Powered Resume Ranker** project was developed to address this problem by using artificial intelligence to automatically rank resumes based on their similarity to a provided job description. This ensures that the best-matched candidates are highlighted, saving time and reducing human bias.

**Abstract**

This project aims to build an intelligent system that can evaluate and rank resumes according to how well they match a specific job description. The system uses natural language processing (NLP) techniques to process both the job description and resumes. By converting the text into numerical features using TF-IDF (Term Frequency–Inverse Document Frequency) and calculating cosine similarity, the tool determines how closely each resume aligns with the job requirements. The output is a ranked list of resumes that can be downloaded as a report. The solution has been implemented as a simple and interactive web app using **Streamlit**.

**Tools Used**

* **Python 3.x** – Programming language
* **Pandas** – Data handling and manipulation
* **SpaCy** – Text preprocessing (tokenization, stopword removal, lemmatization)
* **scikit-learn** – TF-IDF vectorization and cosine similarity
* **Streamlit** – Web application interface

**Steps Involved**

1️⃣ **Dataset Loading**  
The system uses a dataset named UpdatedResumeDataSet.csv that contains resumes and their job categories.

2️⃣ **Text Preprocessing**  
Resumes and job descriptions are cleaned using SpaCy. The text is converted to lowercase, stopwords are removed, and words are lemmatized to their root forms for consistency.

3️⃣ **Feature Extraction**  
The cleaned text is transformed into numerical vectors using TF-IDF. This method highlights important words while reducing the weight of commonly used words.

4️⃣ **Similarity Scoring**  
Cosine similarity is used to measure how close each resume is to the job description. A higher score means a better match.

5️⃣ **Ranking**  
Resumes are ranked in descending order of their similarity score, so the best matches appear at the top.

6️⃣ **Web Application**  
A Streamlit app allows users to paste a job description, see the top matching resumes, and download a CSV report for HR use.

**Conclusion**

The AI-Powered Resume Ranker successfully automates the task of screening resumes against job descriptions. By applying NLP and machine learning techniques, it helps HR teams shortlist candidates faster and more objectively. The app is easy to use and can be customized for different job profiles or integrated into larger recruitment systems. This project demonstrates how AI can add value to modern recruitment processes by improving efficiency and accuracy.