

Resume Analyzer, Job Matcher & Job Recommendation System

Introduction

In the rapidly evolving IT industry, students and fresh graduates face significant challenges in identifying job opportunities that match their skills and qualifications. Although several job portals such as LinkedIn, Indeed, Naukri, and Glassdoor provide a vast number of job listings, searching for relevant positions across multiple platforms is often time-consuming and inefficient. Many IT students struggle to understand which roles best suit their resumes and how to begin their job search effectively. To overcome these challenges, this project proposes CareerMatch AI – Resume Analyzer & Dynamic Job Link Generator, a web-based application designed specifically for IT students.

The system allows users to upload their resumes in digital format, which are then analyzed using Natural Language Processing (NLP) techniques to extract key technical skills and relevant keywords. Based on the extracted information, the system dynamically generates real-time job search links from popular job portals. The application is developed using the FastAPI framework, ensuring fast and efficient backend processing. Instead of directly scraping job portals or using restricted external APIs, the system follows a legal and ethical approach by generating dynamic job search URLs that redirect users to genuine job postings. This ensures up-to-date job availability while maintaining compliance with platform policies. The proposed system simplifies the job search process, reduces manual effort, and provides a centralized and user-friendly solution for IT students. It also offers scope for future enhancements such as skill gap analysis, resume feedback, and cloud-based deployment.

Motivation

- Freshers, MCA students, and career switchers often face confusion while choosing the right job role. Existing job portals show a large number of job listings without personalized matching. Also, using databases increases project complexity for beginners.
- The motivation behind this project is to create a simple, lightweight, and intelligent job recommendation system that works without a database, making it easy to develop, understand, and demonstrate.

Objectives

- To analyze resumes automatically
- To extract skills from resumes using NLP
- To analyze the resume content to identify suitable job roles.
- To dynamically generate job search links based on extracted skills.
- To provide job links from multiple platforms such as LinkedIn, Indeed, Naukri, and Glassdoor.
- To reduce the time and effort required for manual job searching.
- To recommend the most suitable jobs

System Overview

- User uploads a resume (PDF/DOC)
- Resume text is extracted
- NLP module extracts skills
- Job link generator creates dynamic job URLs.
- System displays matching job links.
- User clicks and is redirected to job portals

Functionalities

- Resume upload
- Resume text extraction
- Skill extraction.
- Processes resume data using NLP techniques.
- Generates dynamic job search links based on extracted skills.
- Provides job links from multiple job portals in one place.Skill gap identification.
- Displays relevant job portal links to the user.

Technologies

- Frontend: HTML, CSS
- Backend: Python (Flask)
- Resume Parsing: PyPDF2
- NLP: Keyword matching / SpaCy (optional)
- Data Storage: JSON files

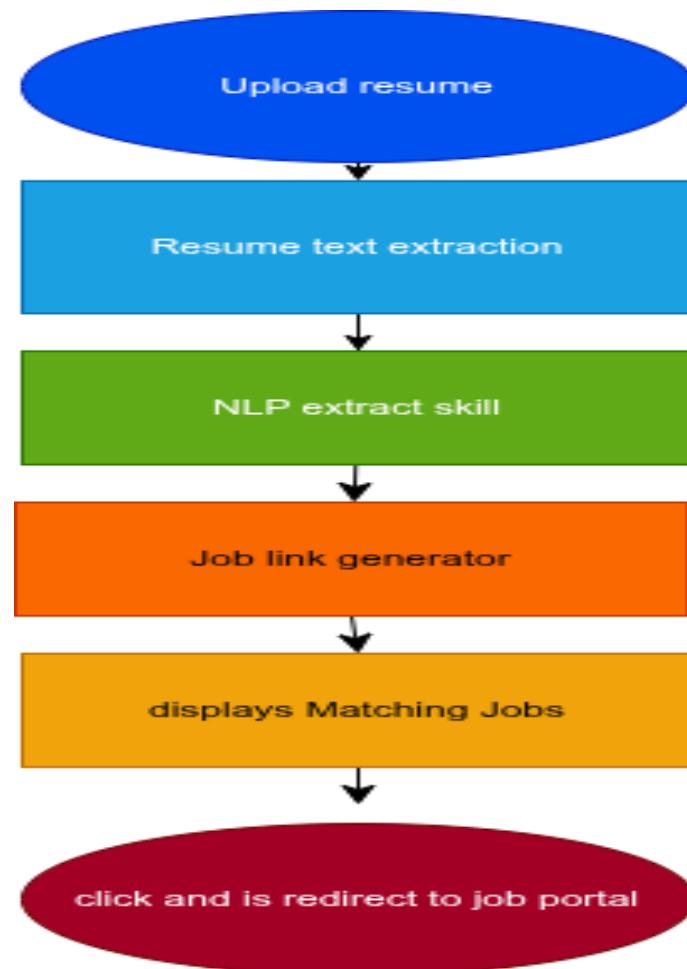
Sprint Backlog

Backlog item	Status	Date	Original Estimation in hours	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12
Sprint 1															
Understand the problem and finalize project scope	on-going	Jan 10	10	1	1	1	0	0	0	1	2	2	1	1	• 0

Design System Structure		Jan 22	8	2	2	1	1	1	1	0	0	0	0	0	0
Sprint 2															
Develop resume upload and file handling Module		Feb 3	7	1	1	2	0	0	0	0	1	1	1	1	0
Sprint 3															
Implement resume parsing and skill extraction		Feb 15													
Generate job search links and display result		Feb 29	8	1	1	1	0	0	0	1	0	1	1	1	1

Sprint 4																
Integrate frontend with backend and test system		mar4	8	2	2	1	1	1	1	0	0	0	0	0	0	0

Prosses Flow Diagram



Time Line

	Activity
Week 1	Problem identification, requirement analysis, and objective definition
Week 2	Study of existing systems and finalization of project scope and tools
Week 3	System architecture design and process flow diagram preparation
Week 4	Resume upload and parsing module design and implementation
Week 5	Develop resume upload and text extraction module
Week 6	Implement skill extraction using NLP techniques
Week 7	Generate dynamic job search links and integrate modules
Week 8	Testing, documentation

Architecture



Conclusion

CareerMatch AI helps IT students find suitable job opportunities by analyzing resumes and generating dynamic job search links from multiple platforms. The system simplifies the job search process, reduces manual effort, and follows a legal and ethical approach, with scope for future enhancements.