

# CV/Resume Shortlisting System based on Skills and Keywords.

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GitHub Link - <https://github.com/prncss-1511/CV-Resume-Shortlisting-System.git>

## Description

The CV/Resume Shortlisting System is a powerful tool designed to automate the initial phase of recruitment by efficiently screening resumes and CVs. Built with advanced natural language processing techniques, the system focuses on identifying key skills and relevant keywords from applicant resumes, comparing them against job descriptions to determine the best fit for the role.

## Key Features:

- **Skills Matching:** The system scans each resume for specific skills required by the job description. It evaluates the presence and relevance of these skills, ensuring that only candidates with the desired expertise are shortlisted.
- **Keyword Extraction:** Utilizing sophisticated text analysis, the system identifies critical keywords in both the resume and the job description, facilitating a precise match between candidate qualifications and job requirements.
- **Automated Scoring:** Each resume is automatically scored based on how well it aligns with the job's criteria, considering factors like skills, experience, and education. This scoring helps recruiters focus on the top candidates.
- **Comprehensive Feedback:** The system provides detailed feedback on each resume, highlighting strengths and areas for improvement, which can be valuable for both recruiters and candidates.
- **Efficient Shortlisting:** By automating the resume screening process, the system saves time and reduces human error, allowing recruiters to focus on interviewing the most qualified candidates.

## Overview

The AI-Powered CV/Resume Shortlisting System is a Python-based web application designed to help users analyze and score resumes against job descriptions using machine learning techniques. The primary goal of the application is to provide detailed feedback on various aspects of a resume, such as skills, experience, education, and overall structure, to help users improve their chances of landing a job.

## Features

- Analyze and score resumes based on job descriptions.
- Provide detailed feedback on skills, experience, education, and resume structure.
- User-friendly interface with a modern look.
- Responsive design for various devices.
- Developed using Flask, HTML, CSS, and JavaScript.
- Machine learning model to provide smart analysis and recommendations.

## Technologies Used

- Frontend: HTML, CSS, JavaScript
- Backend: Python, Flask
- Machine Learning: spaCy, transformers, scikit-learn
- Other Libraries: Flask-WTF for form handling, docx for resume parsing

## User Screens

### Home Screen

**Resume Upload Form:** Users can upload their resumes and provide job details including title, description, responsibilities, required experience, skills, and education.

**Submit Button:** Submit the form to get resume analysis and score.

The screenshot shows a web browser window with the title 'Resume Analyzer'. The address bar shows '127.0.0.1:5000'. The main content area is titled 'Upload Your Resume' and contains several form fields: 'Resume' (with a 'Choose File' button and 'me.docx' text), 'Job Title' (with 'Marketing Manager' text), 'Job Description' (with a text area containing 'Looking for a Marketing Manager with expertise in SEO, Content Creation, Social Media Marketing,'), 'Job Responsibilities' (with a text area containing 'Use Google Analytics for campaign optimization.'), 'Required Experience' (with '5+ years in digital marketing' text), 'Required Skills' (with 'SEO, Content Creation, Social Media Marketing, Google Analytics' text), and 'Required Education' (with 'MBA in Marketing' text). A blue 'Submit' button is at the bottom. The Windows taskbar is visible at the bottom with a weather widget showing 78°F and light rain, and the system clock showing 00:57 on 19-08-2024.

Resume Analyzer

127.0.0.1:5000

### Upload Your Resume

Resume

Choose File me.docx

Job Title

Marketing Manager

Job Description

Looking for a Marketing Manager with expertise in SEO, Content Creation, Social Media Marketing,

Job Responsibilities

Use Google Analytics for campaign optimization.

Required Experience

5+ years in digital marketing

Required Skills

SEO, Content Creation, Social Media Marketing, Google Analytics

Required Education

MBA in Marketing

Submit

78°F Light rain

ENG IN 00:57 19-08-2024

## Analysis Screen

Displays the overall resume score and detailed feedback on different aspects such as skills match, experience match, education match, and resume structure.

The screenshot shows the analysis results in a web browser window. The address bar shows '127.0.0.1:5000'. The page has a 'Required Education' label at the top. Below it is a blue 'Submit' button. A green bar displays the 'Overall Resume Score: 53.95%'. Under the heading 'Details:', there are four lines of match percentages: 'Resume Structure: 0.0%', 'Skills Match: 82.83%', 'Experience Match: 82.51%', and 'Education Match: 41.56%'. At the bottom, an 'Issues' section provides feedback: 'Your skills section could be improved. Consider including skills such as: candidate, team, minimum, ideal, channel, lead, management, google, creation, strategy. Your experience section could be improved. Consider including experiences such as: candidate, team, minimum, ideal, channel, experience, lead, management, google, creation. Your education section could be improved. Ensure it highlights education such as: focus, candidate, team, year, minimum, medium, ideal, analytics, campaign, social. Your resume is missing the following sections: Contact Information, Summary or Objective, Certifications, Projects.'

Required Education

Submit

Overall Resume Score: 53.95%

Details:

Resume Structure: 0.0%

Skills Match: 82.83%

Experience Match: 82.51%

Education Match: 41.56%

Issues: Your skills section could be improved. Consider including skills such as: candidate, team, minimum, ideal, channel, lead, management, google, creation, strategy. Your experience section could be improved. Consider including experiences such as: candidate, team, minimum, ideal, channel, experience, lead, management, google, creation. Your education section could be improved. Ensure it highlights education such as: focus, candidate, team, year, minimum, medium, ideal, analytics, campaign, social. Your resume is missing the following sections: Contact Information, Summary or Objective, Certifications, Projects.

## Setup Instructions

### 1. Clone the Repository

```
git clone https://github.com/prncss-1511/CV-Resume-Shortlisting-System.git
```

### 2. Create a Virtual Environment

```
python -m venv venv  
source venv/bin/activate # On Windows use: venv\Scripts\activate
```

### 3. Install Dependencies

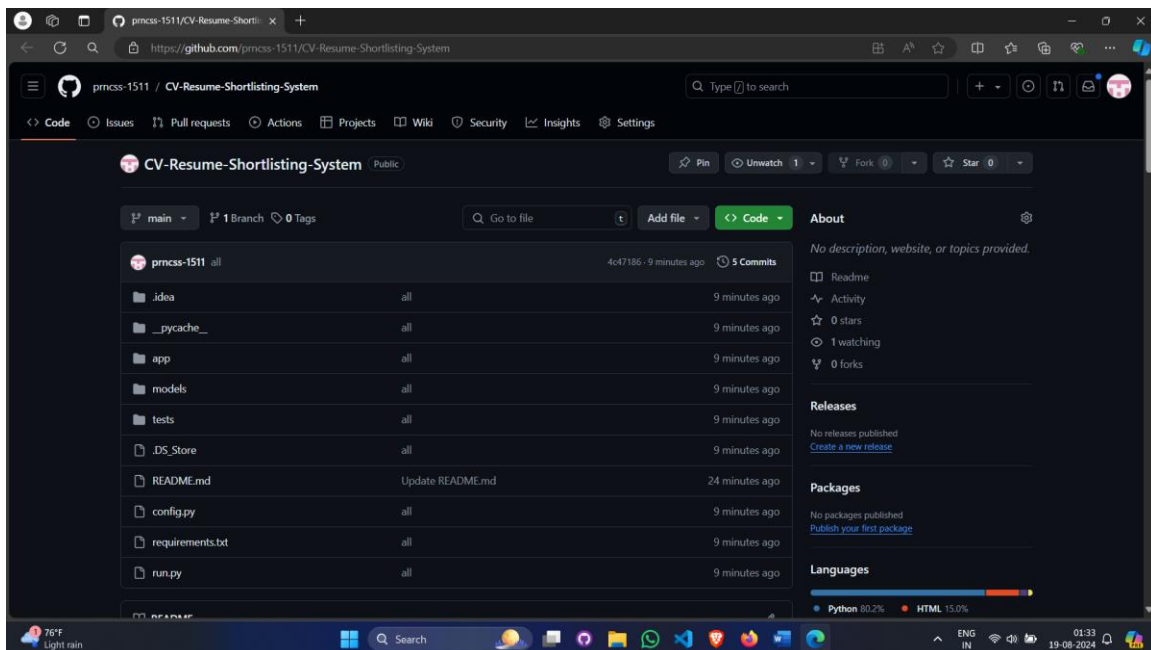
```
pip install -r requirements.txt
```

### 4. Download and Install SpaCy Model

```
python -m spacy download en_core_web_sm
```

### 5. Run the Application

```
python run.py
```



## Project Structure

```
resume_analyzer/  
├── app/  
│   ├── main/  
│   │   ├── static/  
│   │   │   ├── css/  
│   │   │   │   └── styles.css  
│   │   │   ├── js/  
│   │   │   │   └── scripts.js  
│   │   ├── templates/  
│   │   │   ├── base.html  
│   │   │   └── index.html  
│   │   ├── __init__.py  
│   │   ├── routes.py  
│   │   └── forms.py  
│   └── __init__.py  
├── models/  
│   ├── __init__.py  
│   ├── resume_parser.py  
│   ├── job_description_parser.py  
│   └── resume_scorer.py  
├── tests/  
│   ├── test_routes.py  
│   └── test_models.py  
├── .gitignore  
├── README.md  
├── requirements.txt  
└── run.py
```

## Customization

### 1. Update Styles

Modify the styles in `static/css/styles.css` to customize the look and feel of the app.

### 2. Update JavaScript

Adjust the JavaScript in `static/js/scripts.js` for additional interactivity.

### 3. Update Machine Learning Model

Update the machine learning model as needed for more accurate resume analysis.