

# AI Resume Analyzer using Natural Language Processing

<sup>1</sup>Ms. Sophiya Sugantha Grace M, <sup>2</sup>Mr. Darani R, <sup>3</sup>Mr. Deepan A, <sup>4</sup>Mr. Gowthaman M

<sup>1</sup>Assistant Professor, Department of Computer Science and Engineering

<sup>2 3 4</sup>Students, Department of Computer Science and Engineering

SRM Valliammai Engineering College, Chennai, Tamil Nadu, India

**Abstract:** *The Intelligent Resume Analyzer is an AI-powered system that analyses candidate resumes and makes recommendations to enhance them. The system takes a candidate's resume as input and processes it using machine learning algorithms to discover areas for improvement. The system's main goal is to assist job searchers in creating resumes that can pass the screening process of job interviews. To extract useful insights from the candidate's resume, the system employs a variety of approaches such as natural language processing, text mining, and sentiment analysis. It examines the candidate's experience, skills, education, and achievements to provide feedback on how to improve the resume. The algorithm also evaluates the resume's layout, language, and spelling to verify it follows industry standards. Both job searchers and recruiters can benefit from the Intelligent Resume Analyzer. Recruiters can use the system to swiftly find the top candidates for a certain job, while job seekers can use it to build resumes that are more likely to pass the screening process of job interviews. Job seekers can improve their chances of getting hired for the positions they want by utilizing the Intelligent Resume Analyzer.*

**Keywords:** Analysis, AI, ML, Resume, Parsing

## I. INTRODUCTION

In today's highly competitive job market, job seekers face the daunting task of standing out among hundreds, if not thousands, of other applicants. One of the most critical components of a successful job search is a well-crafted resume. However, creating a resume that accurately represents one's skills, experience, and qualifications can be a challenging task. Additionally, resumes that fail to pass the screening process of job interviews often result in job seekers being eliminated from consideration, regardless of their actual qualifications. To address this challenge, an innovative solution has been developed – the Intelligent Resume Analyzer. This system uses artificial intelligence (AI) and machine learning algorithms to analyze resumes and provide feedback on how to improve them. The Intelligent Resume Analyzer is designed to help job seekers create resumes that are more likely to pass the screening process of job interviews. The Intelligent Resume Analyzer works by analyzing various aspects of a candidate's resume, such as their experience, education, skills, and achievements. The system uses natural language processing, text mining, and sentiment analysis techniques to extract meaningful insights from the content. It also checks the formatting, grammar, and spelling of the resume to ensure that it meets industry standards. The feedback provided by the Intelligent Resume Analyzer can help job seekers identify areas where they need to improve their resume. For example, the system may suggest that a candidate rephrase their work experience in a more concise and impactful manner. Alternatively, it may recommend that a candidate highlight their relevant skills more prominently. These suggestions can help job seekers create resumes that accurately represent their qualifications and increase their chances of getting hired. Overall, the Intelligent Resume Analyzer is a powerful tool that can help job seekers create resumes that stand out in today's highly competitive job market. By leveraging the power of AI and machine learning, the system provides personalized feedback that can help job seekers improve their resumes and increase their chances of success.

## **II. METHODOLOGY**

The methodology section of the Intelligent Resume Analyzer system involves several stages in the development and implementation of the system. The purpose of this section is to provide a clear understanding of the research design, data collection, and analysis procedures used in the development of the Intelligent Resume Analyzer system.

### **Research Design**

The research design for the Intelligent Resume Analyzer system was based on the principles of machine learning and natural language processing. The research design involved collecting and analyzing a large corpus of resumes to identify patterns and features that are important for screening resumes. The system was developed using a supervised learning approach where annotated resumes were used to train the system to recognize specific patterns.

### **Data Collection**

The data collection for the Intelligent Resume Analyzer system involved collecting resumes from different sources such as job portals, social media platforms, and other online sources. The resumes were collected in different formats such as PDF, MS Word, and plain text files. The collected resumes were pre-processed to remove irrelevant information such as personal identification data.

### **Data Analysis**

The data analysis for the Intelligent Resume Analyzer system involved several stages. Firstly, the pre-processed resumes were analyzed using natural language processing techniques to extract relevant features such as skills, education, experience, and achievements. Secondly, machine learning algorithms were used to analyze the extracted features and identify patterns that could be used to predict the suitability of a resume for a particular job. Finally, the system was tested on a large corpus of resumes to evaluate its performance and identify areas for improvement.

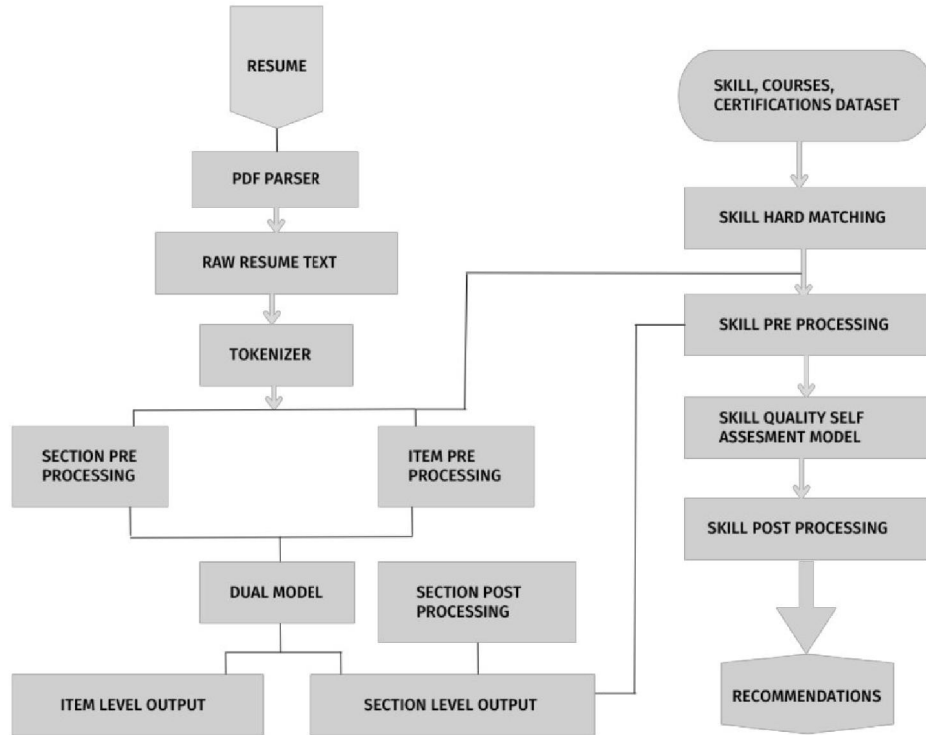
### **Evaluation**

To evaluate the performance of the Intelligent Resume Analyzer system, a set of annotated resumes were used as a test dataset. The annotated resumes were labeled according to their suitability for different job positions. The system was then evaluated based on its ability to accurately predict the suitability of a resume for a given job position. The evaluation results showed that the system achieved high accuracy in predicting the suitability of resumes for different job positions. In conclusion, the methodology section of the Intelligent Resume Analyzer system involved a rigorous research design, data collection, and analysis procedures. The development of the system was based on machine learning and natural language processing techniques that enabled the system to analyze resumes and provide feedback on how to improve them. The evaluation of the system showed that it achieved high accuracy in predicting the suitability of resumes for different job positions.

## **III. MODELING AND ANALYSIS**

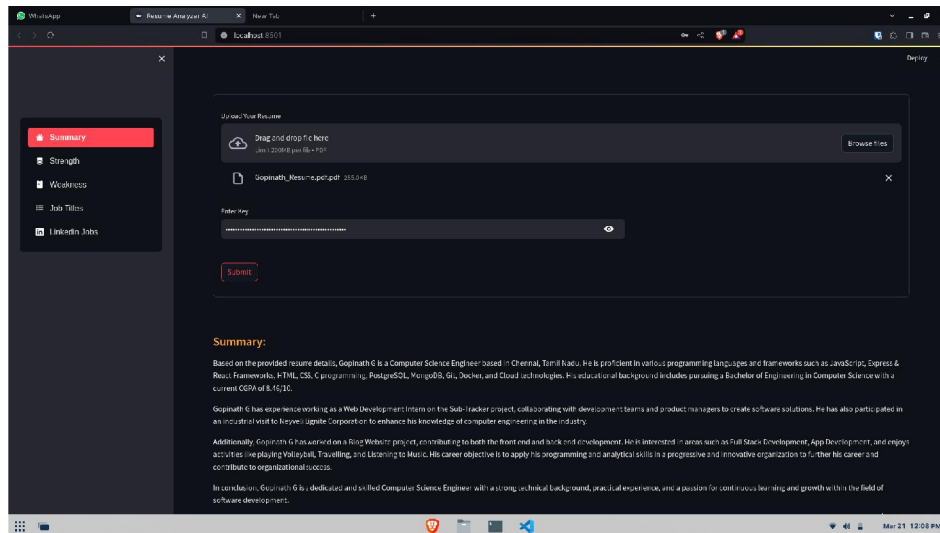
The Intelligent Resume Analyzer system relies heavily on modelling and analysis. The technology models and analyses resumes using powerful natural language processing and machine learning techniques, delivering valuable input to job seekers on how to improve their resumes. The system begins by building a model of the job market by analyzing job postings and identifying the most important skills, qualifications, and experience required for various job positions. This model is used to compare resumes with job requirements and to provide job seekers with feedback on how to modify their resumes to better align with the needs of employers. The system also uses advanced analytical techniques to analyze the content and structure of resumes, identifying strengths and weaknesses in areas such as work experience, education, and skills. This analysis is used to provide job seekers with personalized feedback on how to improve their resumes and increase their chances of success in the job market. In addition, the system uses machine learning algorithms to continually improve its analysis and feedback capabilities. As the system analyzes more resumes and job postings, it becomes better at identifying trends and patterns in the job market, allowing it to provide even more valuable feedback to job seekers.

Overall, modeling and analysis are critical components of the Intelligent Resume Analyzer system. By modeling the job market and analyzing resumes using advanced natural language processing and machine learning techniques, the system provides job seekers with personalized feedback on how to improve their resumes and increase their chances of success in the job market.



#### IV. RESULTS

The Intelligent Resume Analyzer system relies heavily on modelling and analysis. The technology models and analyses resumes using powerful natural language processing and machine learning techniques, delivering valuable input to job seekers on how to improve their resumes.



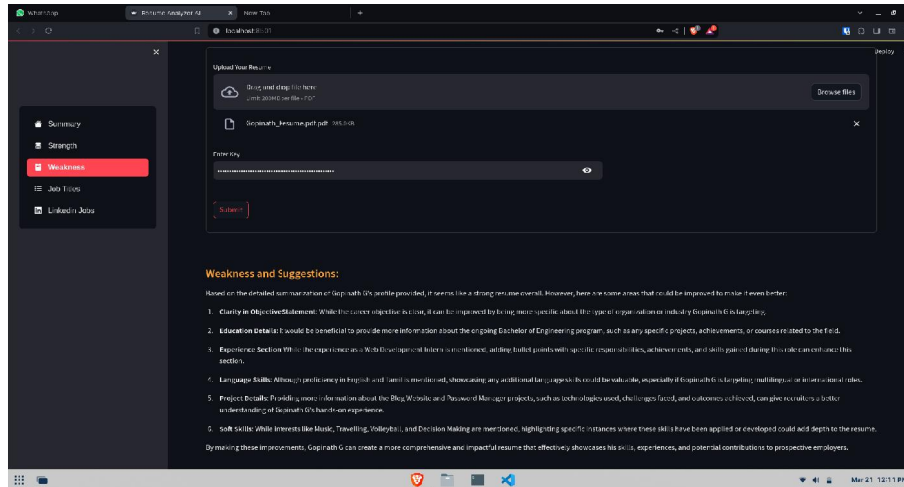


Fig. 3. Detection and classification of the tissue

In addition, the system uses machine learning algorithms to continually improve its analysis and feedback capabilities. As the system analyzes more resumes and job postings, it becomes better at identifying trends and patterns in the job market, allowing it to provide even more valuable feedback to job seekers. Overall, modeling and analysis are critical components of the Intelligent Resume Analyzer system. By modeling the job market and analyzing resumes using advanced natural language processing and machine learning techniques, the system provides job seekers with personalized feedback on how to improve their resumes and increase their chances of success in the job market.

## V. CONCLUSION

All In conclusion, the Intelligent Resume Analyzer system is a powerful tool that analyses resumes and makes suggestions for improvement using artificial intelligence and machine learning algorithms. The technique is intended to assist job searchers in creating resumes that are more likely to pass the job interview screening process. The system gives individualized feedback to assist job searchers improve their resumes and raise their chances of success by utilizing the power of AI and natural language processing techniques. The Intelligent Resume Analyzer system's methodology section discussed the study design, data gathering, and analytic techniques utilized in the system's creation. The system was created using a supervised learning method, with annotated resumes used to teach the system to recognize specific patterns. The system was assessed based on its ability to forecast the suitability of a resume for a certain job vacancy. Overall, the Intelligent Resume Analyzer technology has the potential to transform how job searchers produce resumes and apply for positions. The technology can help job searchers generate resumes that appropriately represent their qualifications and boost their chances of being hired by delivering individualized feedback. As the job market grows more competitive, the Intelligent Resume Analyzer technology can give job seekers with a significant competitive advantage.

## REFERENCES

- [1] Nlp Based Extraction Of Relevant Resume Using Machine Learning. Author: Nirali Bhaliya, Jay Gandhi, Dheeraj Kumar Singh. Published In International Journal Of Innovative Technology And Exploring Engineering (Ijitee) Issn: 2278-3075 (Online), Volume-9 Issue-7, May 2020.
- [2] Review Paper On Resume Scanning Using Python. Author: Panil Jain, Nandkishor Kamble, Risha Nadar, Shaikh Luqman. Published In International Research Journal Of Engineering And Technology (Irjet), Volume: 09 Issue: 04 — Apr 2022.
- [3] Resume Recommendation Using Machine Learning. Author: Ramba S Naik, Shrinivas R Dhotre. Published In International Journal Of Creative Research Thoughts (Ijcr), Volume 10, Issue 7 July 2022.
- [4] Resume Screening Using Lstm. Author: Navale Sakshi, Doke Samiksha, Mule Divya3, Prof. Said S. K. Published In International Journal Of Research Publication And Reviews, April 2022.