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Personality prediction and CV analysis using Machine Learning

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ABSTRACT: Associations retain expert contenders for their development.to choose the right candidate is their concern. Every time, they admit a lot of operations, and it will be delicate for them to go through all the operations and retain the swish contenders. Traditionally, they go through the contenders' CVs or resumes and retain them. In this paper, the proposed system helps to retain the right contenders by parsing the data in CVs and resumes and by conducting quizzes to predict personality. Machine Learning is used to make the model that will parse the data. The system also uses pyresparser to parse the information from a CV or resume. The model helps to find the personality and details of the contenders, analogous as chops, experience, and so on. Using this system, associations can find expert contenders and make thehiring department's work smoothly.

KEYWORDS: Personality Prediction, Pyresparser, Logistic Regression, CV, Resume.

I. INTRODUCTION

One of the most crucial elements in determining whether someone is a good fit for a position is their ability to effectively influence and communicate with others, which facilitates the development of a relationship. When there's a call for withinside the business enterprise, they admit hundreds of operations and it's absolutely sensitive for the humans of the business enterprise to undergo a number of CVs and discover an appropriate candidate for the call for the usage of conventional methods like technical tests, interviews, and group exchanges. So withinside the first spherical itself, they clear out the contenders predicated on special elements like whether or not they may be appropriate for the part, their abilities, infelicitous CV, and the chops of the candidate. So, to be able to drop the issue withinside the hiring manner, we advise a brand-new manner in which the manner of concluding and brief table contenders receives easier. That is through the usage of character prophecy. For character prophecy also, we're the usage of a gadget gaining knowledge of set of rules this is logistic regression. A character takes a look at and a CV assessment each make contributions to the dedication of someone's character. predicated at the character take a look at rating and CV evaluation, we handpick the candidate this is appropriate for the call for.   As we previously recognize thru CVs, we are able to handiest recognize the chops and qualifications of someone however now no longer their character. Personality is one of the maximum critical elements in figuring out whether or not or now no longer someone can carry out properly in an association. therefore, character evaluation and information are the maximum distinguished elements to consider. The most important concept of this layout is to broaden a gadget that could make practical analyses and make honest reviews in concluding contenders. Our layout's number one aspect is to make character prognostications predicated on someone's BIG FIVE- TEST rating. multitudinous job contenders will observe for a function whilst the enterprise gives unique employment situations and information. therefore, job contenders fill out their online CV first earlier than taking the take a look at. In substance, the take a look at we hired is the BIG FIVE TEST.

Based on the results of each area, we get to know the personality of the person, i.e., serious, outgoing, lively, reliable, responsible. To highlight resume information like name, age, gender, etc. we used a simple capsule parser, Pyresparser. We also used an important natural language processing tool, namely NLTK. There, after entering the CV information and the test report, we arrange for the assessment of the person. Finally, after receiving the result, a CV analysis is carried out.

II. RELATED WORK

Jenal Parmar [1] has developed a system that helps companies select stylish candidates for open positions. The human resources department provides the qualifications, experience and other information required for a specific position. The system loads candidate data and CVs and selects the right person for the right job profile. Allan Robey [2] built the system using modern technology. This helps in the effective and efficient selection of suitable candidates. The system performs a weight and age guideline and an aptitude test to determine the personality of the candidate. Therefore, the best candidates are shortlisted. Sudhir Bagade [3] states that personality plays an important role both in the life of the individual and in the development of any association. An online operation has been developed that analyses a researcher's personality based on their CV or resume. The system uses the TF-IDF algorithm to manually select the right activists. Atharva Kulkarni [4] has developed a system that uses various machine learning algorithms to predict the personality of rivals using natural language processing. Finally, Random Forest achieves better language proficiency than other similar algorithms such as ANN, Logistic Regression, Support Vector Machine, and Naive Bayes. Rutuja Narwade [5] completed an online personality assessment and CV analysis. The system uses natural language processing to analyse resumes and machine learning methods to predict the personality of. The system processes filtered rivals, which will help in predicting the rivals' position and mood. Pruthviraj Patankar [6] has set up a system that uses different methods to qualify a candidate as an expert. The system arranges the players according to age criteria. The personality prediction test is used to determine the personality traits of the candidate. The newbie also receives the results and analyses them before selecting potential candidates. Dany Azucar [7] Collecting and analysing digital debris. Several meta-analyses have been conducted on fingerprint divination. The Big Five personality traits are used to recommend goods or services to customers based on their preferences. Kalghatgi [8] published a neural network approach based on the Big Five test to assess an individual's personality from tweets posted on Twitter by matching the meta-attributes of the tweets used to analyse social behaviour. While neural networks are used to predict personality, there are similar shortcomings in fake message detection, automated tweet analysis, and the inadequacy of using regular Twitter to predict users' behaviour and trends rather than their personality. Md Tanzim Reza [9] evaluated the CVs of NLP and ML users, converted them to HTML, negotiated them with the HTML right and finally proceeded to complete the membership and birth point qualification. The model takes the data from the CV and splits it into paths based on the value. Multivariate logistic regression was used to classify CVs. Despite this, the dataset size was relatively small. Golbeck [10] suggests that social media is a platform where people can participate in all life events and so on. Through this prophecy we come to the conclusion that the personality and relationships of an existing person are predicted based on what he has imparted. on twitter. It is reminiscent of the fashion of accurate user personality prediction

III. METHODOLOGY

The system structure as showed in Fig1 involves candidates providing their questionnaire answers, personal details, and uploading their resumes. The questionnaire answers are utilized to assess personality traits such as reliability, sociability, liveliness, seriousness, and responsibility. Additionally, the system scans the resumes to extract essential information including name, email address, phone number, skills, experience, and future prospects. After analysing the collected data, the system generates predicted personalities for the candidates. This integrated approach enables a comprehensive evaluation of candidates, combining questionnaire-based personality assessment and resume analysis to provide valuable insights into their suitability for specific roles.
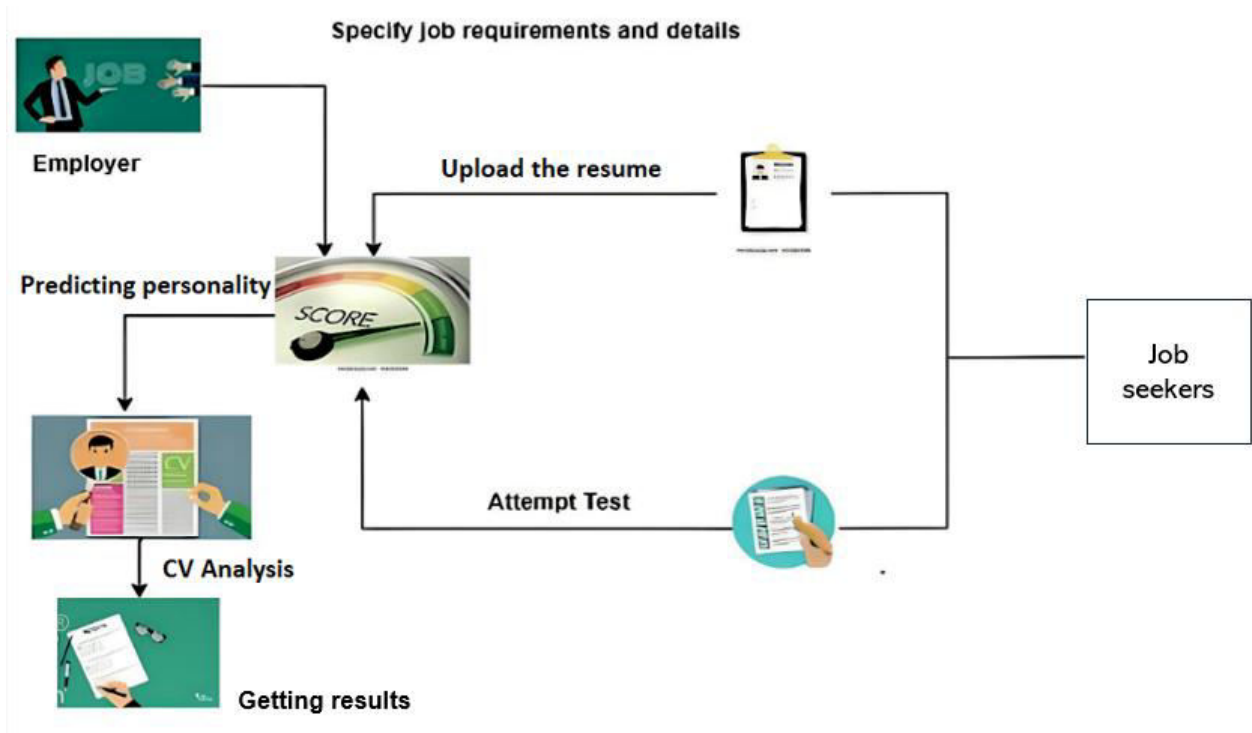
Fig. 1. Proposed System architecture

The design of the personality prediction and CV analysis system for candidate selection will be based on a systematic methodology to achieve its goals. Key steps of the methodology include:

Data Collection: Design and implement questionnaires and assessments to collect data on candidate personality traits. This data is used as the basis for personality prediction.

Feature Extraction: Extract relevant information from a candidate's resume, including skills, experience, qualifications, and achievements. This step requires the use of natural language processing techniques to effectively parse and parse resume data.

Model Development: Applying advanced machine learning algorithms such as logistic regression to build a predictive model. This model uses data from tests and assessments to accurately predict candidates' personality traits.
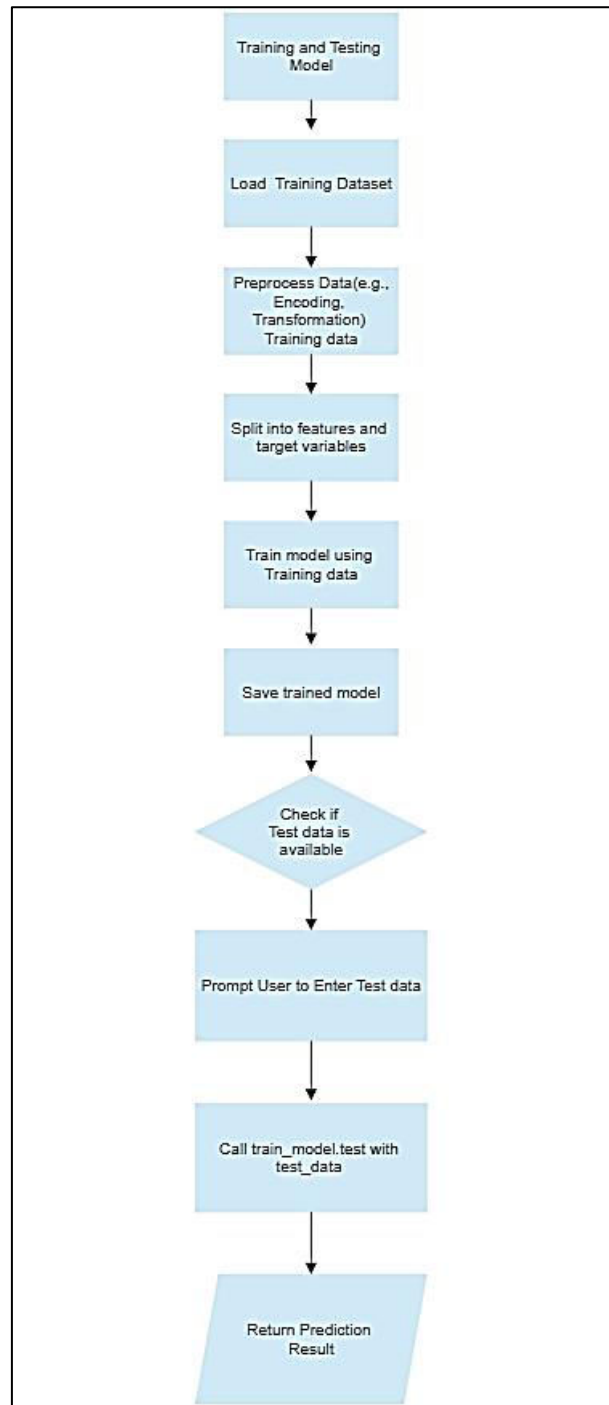
Fig. 2. Training and Testing process

Training and Validation: Train a predictive model using a data set that is labelled to ensure its accuracy and reliability. The model undergoes rigorous validation to evaluate its performance and make the necessary improvements.

Integration: Integrate the personality prediction model with the resume analysis component to create comprehensive candidate profiles. This integration creates an overall picture of the personality, skills and qualifications of the candidate.

System Testing and Evaluation: Thorough testing of the system to ensure functionality and effectiveness. Assess system performance using pre-defined metrics such as accuracy and efficiency.
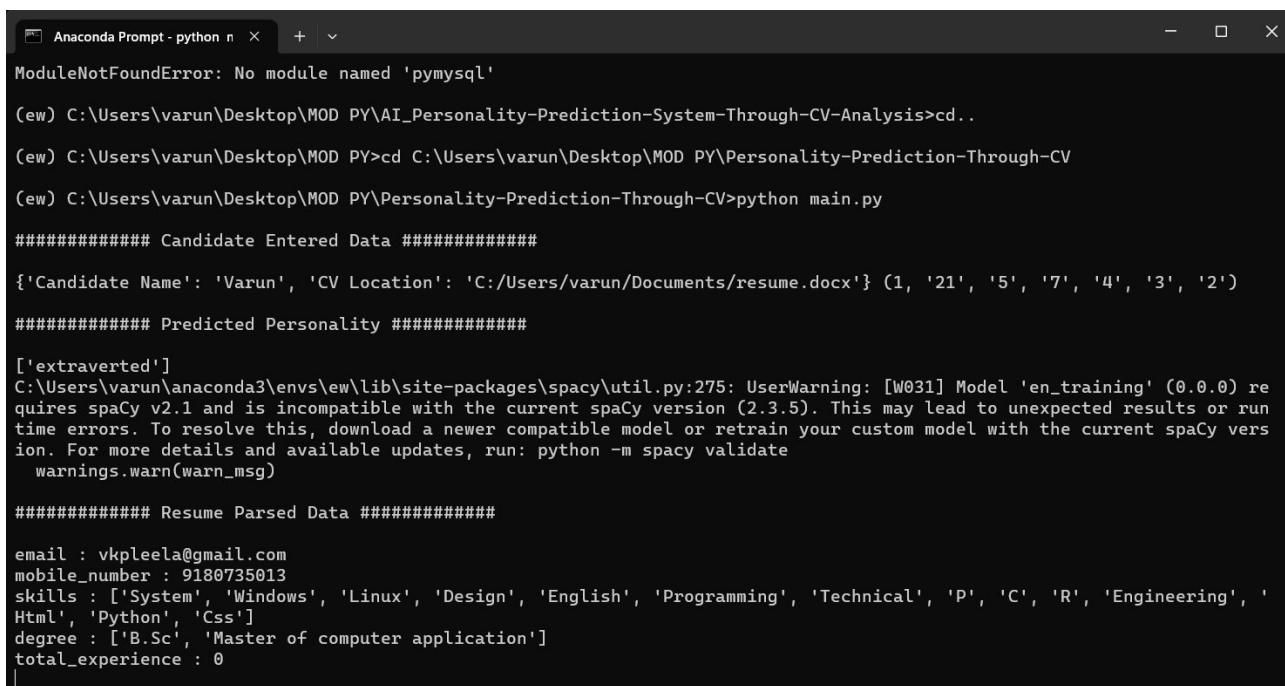
Implementation: Implementing the system in real hiring conditions and obtaining opinions from recruiters and HR specialists. These comments are used to improve and customize the system.

Continuous Improvement: Regularly update and improve the system based on user feedback, advances in technology, and emerging trends in recruiting and machine learning.

Based on this methodology, the project aims to develop a robust and efficient personality prediction and CV analysis system that could revolutionize the candidate selection process in organizations.

IV. RESULTS

If a candidate wants to apply for a job, they must take a questionnaire. A window will open in which the candidate must fill in the data and submit a CV or Resume. The candidate fills in the data, sends a CV and takes questions and answers them based on personality.

Fig. 3. Parsed details

The resume or CV is scanned from template. The candidate personalities are predicted by the ocean model displayed as a result. The results are as follows:
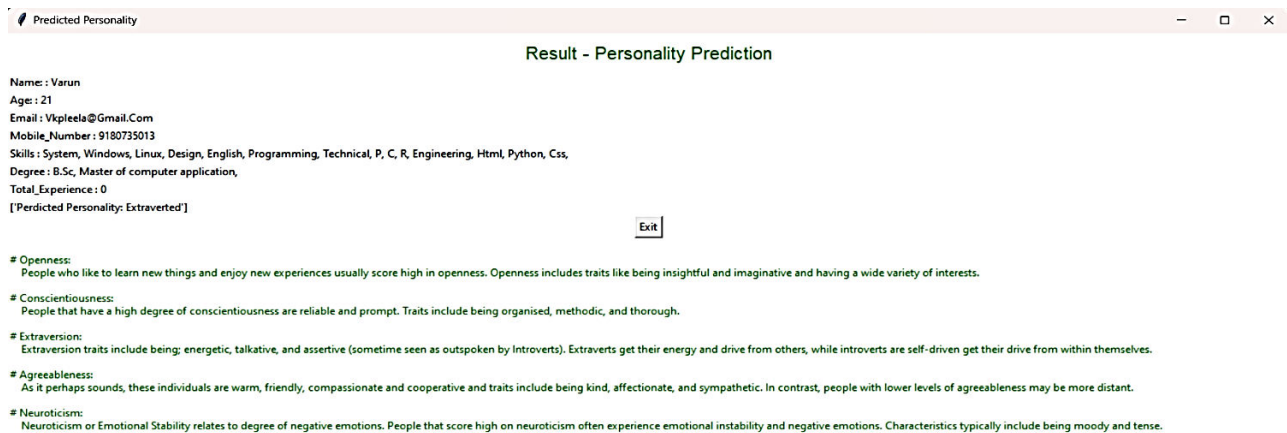
Fig. 4. Showing the results of personality test

V. CONCLUSION

In summary, the Personality Prediction System and Resume Analysis for Candidate Selection project offers an innovative approach to revolutionize recruitment practices. Using advanced machine learning techniques, the system accurately predicts candidates' personality traits and analyses their resumes, enabling companies to make informed decisions and create comprehensive candidate profiles. The project results underscore the effectiveness of the system in increasing the efficiency and effectiveness of the candidate selection process. With the ability to streamline talent acquisition, identify the best candidates and align them with the needs of the organization, the system can significantly improve recruitment outcomes and contribute to the overall success of the organization.

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