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Implementing Personality Prediction Using Machine Learning

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Abstract – This study attempts to examine different machine learning approaches for efficiently predicting personality through CV analysis. With an exponential increase in job seekers but a decrease in the number of jobs, it is difficultto manually shortlist the best fit candidate for a suitable job by looking at the CV. The real time application will help them in sorting CV and analyzing the personality of the person. Personality prediction has been an important research topic for describing user profiles and person not only in psychology but also in computer science. This paper presents a systematic survey of current work done of personality prediction. We are using KNN Algorithm for Prediction Purpose. The system will also provide Job Suggestions to the job seekers so that they will be able to understand which job will be suitable for them.

Key Words: Personality Prediction, CV, KNN

1. INTRODUCTION

It is very difficult for human beings tomanually go through the CV of all applicants. Hiring the right candidate is a very difficult task as no candidate is perfect, some might not be skilled enough or some might not have the right personality. Hence, we propose a way in which the process of shortlisting gets streamlined and faster by personality prediction. Our objective doing this project is to make the machine more human, and analyze the candidate in such a way that an actual human reviewer would. Our system also provides job recommendation based on theperson's personality. By using our system the hiring process gets easy as well as the person will get an idea that which job will besuitable for that person. The main motivation behind the project is to automate and ease the hiring process reducing the heavy workload the Human Resource (HR) department faces during the hiring drive. It is also helpful for the candidate as it can actas a streamlined interface between candidateand Human Resource (HR). The main purpose of our project is to develop a portal whichcan be main stream for both the candidateand HR and automate and optimize the entire hiring process. Finding ways to predict more than one job role for a given Curriculum Vitae(CV) by a candidate is a major challenge. OurSystem will also provide job as well as careersuggestion based on the questionnaire so thatthe job seeker will get to know which job willbe suitable for him/her. K-Nearest Neighbors is one of the easiest , simpleand most efficient classificationalgorithms in Machine Learning. It belongs to the supervised learningdomain and finds intense application inpattern recognition, data mining andintrusion detection. The K- Nearest Neighbors (KNN) algorithm can be used to solve both classification and regression problems. The KNN algorithm assumesthat similar things exist in close proximity.

1.1 AIM AND OBJECTIVES

Our aim is to help the Human Resource (HR) round go more smoothly and efficiently so that a person's personality can be predicted beforehand without wasting much time of the HR also to sort the resumes according to the requirements of theorganizations.

1.2 EXISTING SYSTEM

The Conventional method of recruiting the candidates involves manual short listing of job seekers resumes, then the first round consisting of written tests for testing the candidates intelligent quotient. The second and third rounds consist of Technical test and the last round is HR round. Every company has their own way and number of rounds according to their business requirements and according to the requirement of the company. A system that automates the task of segregating candidates based on eligibility criteria and personality evaluation is not common. Also, the systems that exist does not provide accurate results and accuracy is medium.

1.3 LITERATURE REVIEW

We have analysed many research papers related to personality prediction in the view to fulfil new requirements necessary for developing our project.

[1] In this paper the author has developed apersonality prediction project using the Conventional Method of recruiting thecandidate which involves manual short listingof job seekers resume according to the requirement of the company. The system automates the task of segregating candidates based on eligibility criteria and personality evaluation in a recruitment process is proposed.

[2] In this paper the author has stated that they have used Personality traits on social networks. It shows the framework of Attention Recurrent Neural Network KNN: K Nearest Neighbor Algorithm. Liner Regression, Logistic Regression: They contain linear andlogistic regression methods and their variations.

[3] In this paper the authors proposed and have summarized the role of popular machinelearning algorithms in predicting personality from social media data. Some noteworthy ones include Naïve Bayes, KNN, SVM.

[4] In this paper the authors has stated in their paper that they have used a model. In which they embed the users; discrete behaviour into footprints and adopt Recurrent

[5] In this paper they have used different classification algorithms like KNN and SVM. IT is examined that KNN gives a better outcome than SVM. The author can use moremachine learning algorithms for personality traits prediction. It is examined that KNN gives a better outcome than SVM. The author can use more machine learning algorithms for personality traits prediction.

[6] The author has used user's social media data which can thus be used to predict his/her personality. The main objective of this work is to review the workcarried out for personality prediction using social media data.

2. PROPOSED SYSTEM

In Manual job hiring the HR has to go through each job seeker resume. Which is very time consuming and very hectic for the HR. Every time there is a job opportunity there is a large number of job seekers who applied for that job so in order to shorten the efforts of the HR and for a faster and efficient hiring process we have proposed a system. As manual data collection is time- consuming, we will collect candidate resumes through a lot of websites and personal interaction with potential job seekers taking thetotal count to 150 CVs. The collected CVs are in PDF and DOCs format.

2.1 UML DIAGRAM

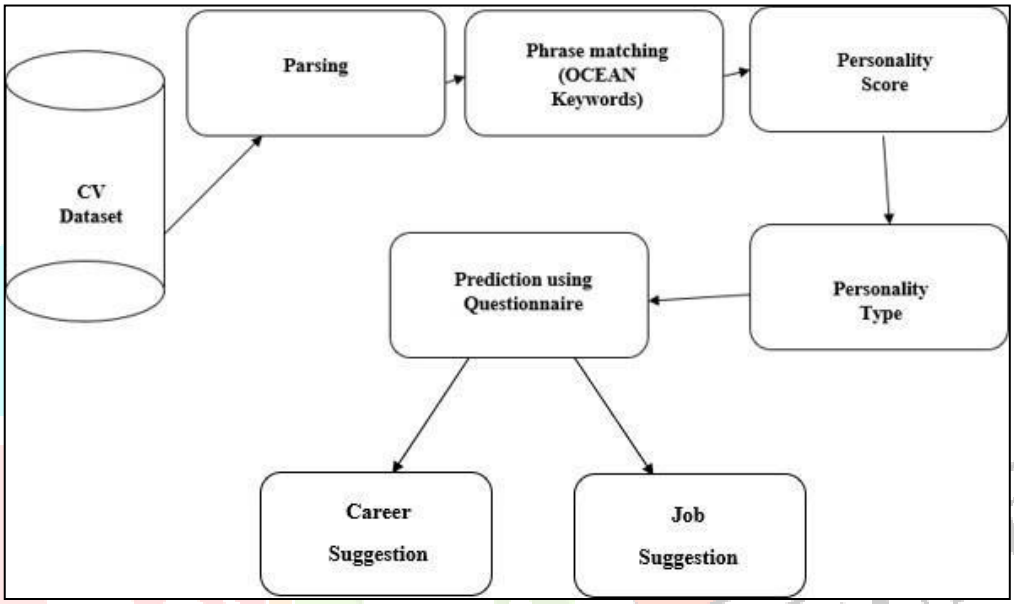


Fig 1: Flowchart of the proposed system

DATASET:- All the CV that has been uploaded for the specific job is stored here.The CV's are uploaded by the user for thejob seekers.

PARSING:- Parsing refers to converting data from one format to another format. It is basically a string of commands which are separated into more easily processed components, which is analyzed for correct syntax.

PHASE MATCHING:- The Big Five Personality Traits Model measures five key dimensions of people's personalities.

Openness: Sometimes called "Intellect" or "Imagination," this measures your level of creativity, and your desire for knowledge and new experiences.

Conscientiousness: This looks at the level of care that you take in your life and work. If you score highly in conscientiousness, you'll likely be organized and thorough, and know how to make plans and follow them through. If you score low, you'll likely be disorganized.

Extraversion/Introversion:
this dimension measures your level of sociability. Are you outgoing or quiet, for instance? Do you draw energy from a crowd, or do you find it difficult to work and communicate with other people?

Agreeableness: this dimension measures how well you get on with other people. Are you considerate, helpful and willing tocompromise? Or do you tend to put your needs before others'?

Natural Reactions: sometimes called "Emotional Stability" or "Neuroticism," this measure emotional reactions. Do youreact negatively or calmly to bad news? Do you worry obsessively about smalldetails, or are you relaxed in stressful situations?

PESONALITY SCORE:- Based on the answers given by the job seeker each individual will get a personality score based on the answers they have given.

PERSONALITY TYPE:- Based on the answers given by the job seeker each individual will get to know about their personality.

JOB SUGGESTION:- Based on the person's personality the system will provide job suggestions like it will help to

suggest a job post for the employee based on the questionnaire.

CAREER SUGGESTION:- Based on the person personality the system will provide job suggestions likeit will help tosuggest a career for the job seeker based on the questionnaire.

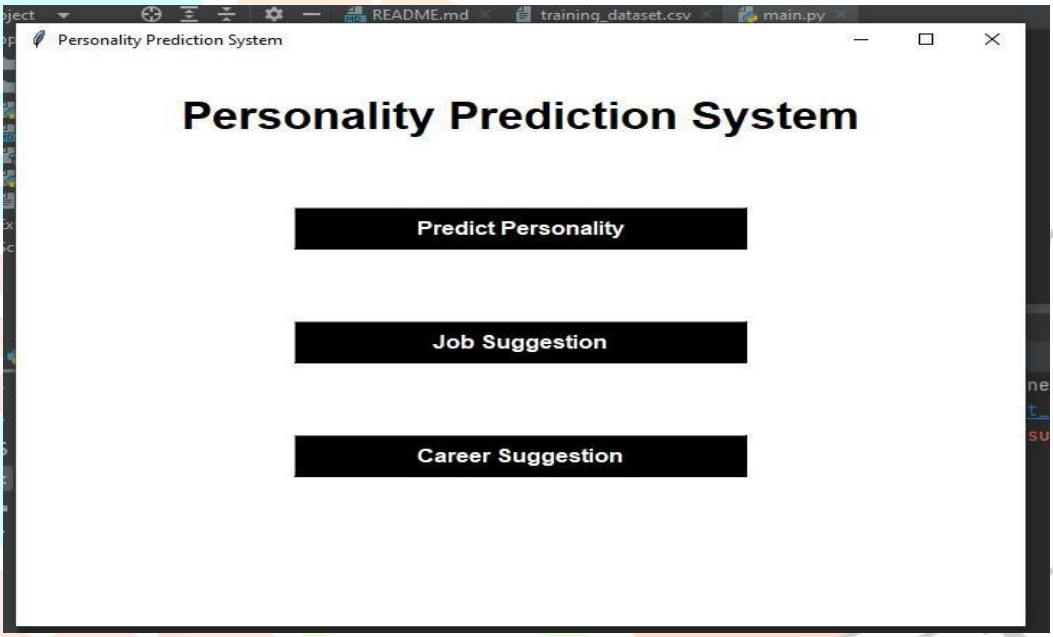
The method is to predict the personality of a person based on their score of openness, extraversion, agreeableness, neuroticism and conscientiousness. For achieving this, we needed a way to calculate the scores directly from every CV.

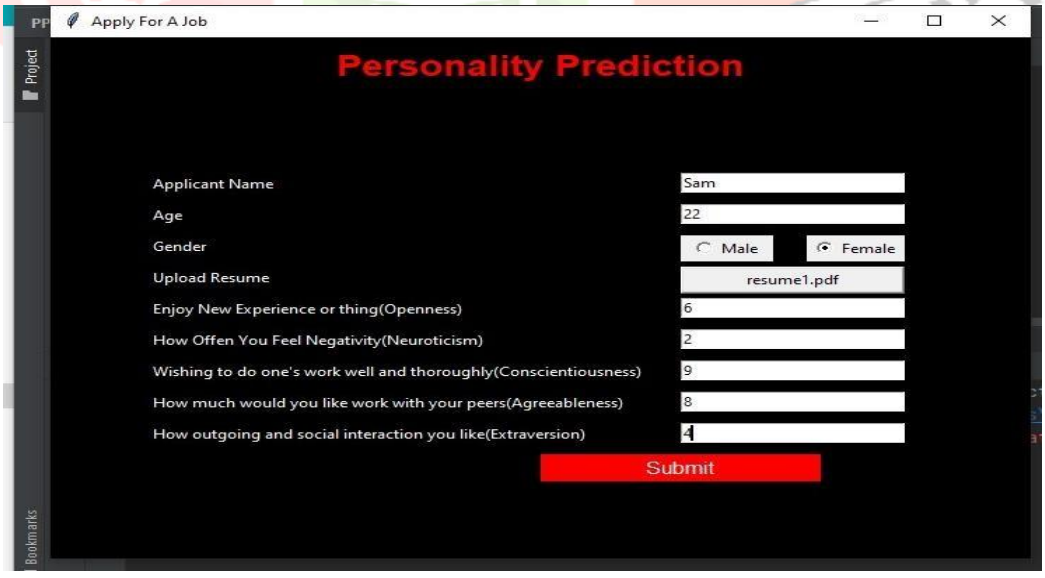
Our approach as in our system was to parse the entire resume and search for keywords relating to the "Big Five Test".

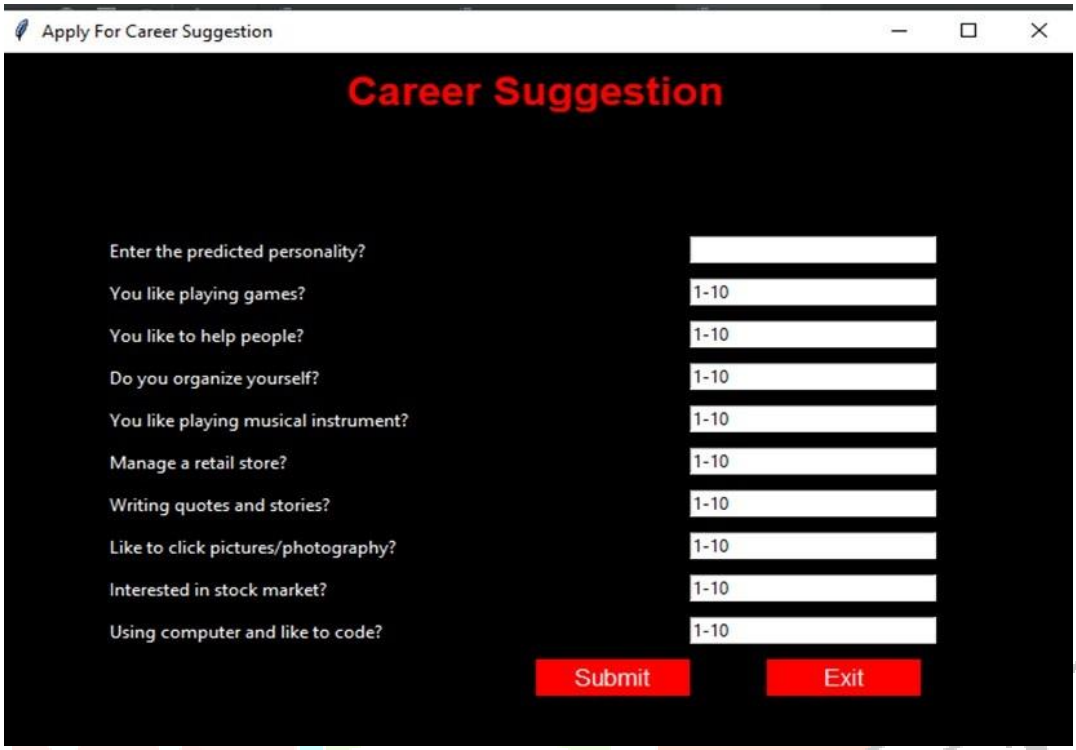
3. METHODOLOGY USED

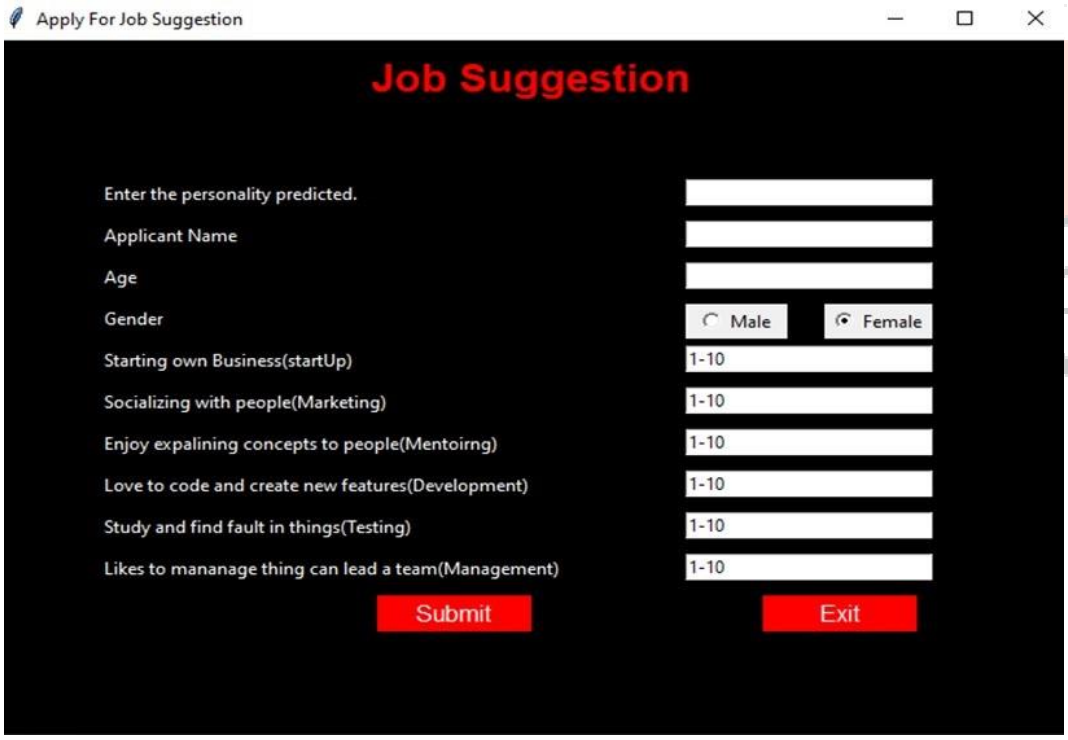
- First, we take candidate skill test, tocheck the overall mentality and behavior of the candidate also to check for, how the candidate takes different situation and handles or views according to him/her.
- Secondly, the candidate has to upload his or her CV.
- Finally, we propose the k-means algorithm for clustering the approximate skills, technical skills and experience required, according to particular job requirement.

4. RESULTS









5. CONCLUSION

Our system will provide better and efficient solution to current hiring process. This will give the organization the required candidate and also a candidate with an enduring and positive personality in the required field. Provide potential candidate to the organization and the candidate will be successfully being placed in an organization which appreciate his/her skillset, personality and ability. Our system is a system that will help the (related toworkers in general) to select the right candidate for the desired job profile, which in turn provide the expert (all the workersin a company) and makes it more flexible for both the entity.

6. FUTURE SCOPE

IT sector has largest recruiting sector. Our proposed system is initially concerned with IT companies and Marketing sector to recruit the right candidate with an enduring personality possessing a positive attitude, perfect skills ,marketing skills and technical skills. IT recruitment and Marketing recruitment is in bulk so to reduce the manual work and make sure the intakeis of the right candidate. It is also applicable for different jobs and profession. It will also help the user with jobs and career suggestions.

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