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AI BASED PERSONALITY PREDICTION

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Abstract:- Our Project shows that textual content of answers to standard interview questions related to past behaviour and situational judgement can be used to reliably infer personality traits.The ability to measure an applicant's personality in the selection process helps recruiters, hiring managers and the applicant make better hiring decisions.We 'll be using data from over many job applicants who completed an online chat interview that also included a personality questionnaire based on the six-factor HEXACO personality model to rate their personality.Using natural language processing (NLP) and machine learning methods we've build a regression model to infer HEXACO trait values from textual content.We'll be comparing the performance of five different text representation methods and found that term frequency-inverse document frequency (TF-IDF) with LatentDirichlet Allocation (LDA) topics performed the best with an average correlation.We've further validated our model candidates to those who used an agreement scale of yes/no/maybe to rate the individual trait descriptors generated based on the model outcomes.

Index Terms :- HEXACO personality traits, linguistic analysis, personality prediction, natural language processing.

Introduction:-

Organizational psychologists have long hypothesised that one's personality is closely related to his job performance, job satisfaction and tenure intention. The research outcomes suggest that the work is more enjoyable and thus engaging to the individual and beneficial to the employer and the society at large when there is congruence between one's personality and career. However, conducting a personality test adds an extra cost to the recruitment process and also tend to diminish candidate experience as personality tests are less favoured by candidates compared to other methods such as job interviews. Hence personality tests are not as present as the employment interviews, the most widely used selection method in the past years.

The AI based personality detection projects helps to predict the personality of the candidate through some of the open ended questions. The personality is detected through the use of artificial intelligence by using the Naive Bayes algorithm and theTF-IDF with LDA function available in artifical intelligence only. The system will have three basic modules which are the Company's login module, the HR's login module and the Candidate's login module.We hypothesized that the textual content of answers given by candidates to questions of past behaviour and situational judgement to include patterns that are correlated with their personality.

The widely accepted approach to testing for personality in the recruitment process is to use a personality inventory such as NEO-PI-R, HEXACO-PI-R or a similar personality question based on either the five or six factor model of personality.The questions asked in a structured interview are derived using a job analysis as opposed to interviewer preference and are typically based on past behaviour and situational judgement.Company has the authority to post the job vacancies and add the HR while viewing the selected candidates after the HR has shortlisted them based on their performance. HR can then view the candidate details ie. the form which the candidate has filled and the score of the candidate.Whereas in the Candidate login, the candidate has to initially sign up and then has to select the position for which he/she has to apply and accordingly fill the form. after the form is being filled, he /she has to attempt the personality prediction test and his score is evaluated automatically.This score is then visible at the HR's end and he/she has the right to select or deselect the candidate. and the selected candidates can be seen at the company's login.This system helps companies to hire expert candidates which result in the growth of the company. It saves a lot of time of the Human resource department by simplifying the hiring process. Helps HR to shortlist resumes quickly based on the job description. Based on a meta-analysis of multiple studies on application reaction to selection methods, We found that compared to job interviewsand work sample tests, personality tests fall short of makinga positive impression with candidates in areas of face validity,opportunity to perform, interpersonal warmth and respectfulof privacy. These indicate candidates' preference to expressthemselves and not be restricted to self-rating themselves ona pre-defined set of multiple-choice questions as found in the personality tests.

IDENTIFY, RESEARCH AND COLLECT IDEA:-

1. **The big five personality dimension and job performance: a metaanalysis**

It uses metadata to anaylyze and predict the personality by doing metaanalysis[1].The technologies used were Artificial Intelligence and Natural Language Processing.The limitations of this paper were that their model was restricted to predict the personality based on just three terms i.e. Extraversion , Conscientness and openness to experience only[3].

2. **Big five personality traits and turnover intentions among employees**

It uses the big fiver personality traits to predict the turnover intentions amng the Employees. It used the six traits used in artificial intelligence HEXACO to get the score of the employee intentions[7]. The limitations of this paper were that their model lacked to predict the potential while judging the companies employees[8].

3. **Predicting personality using answer to open ended questions.**

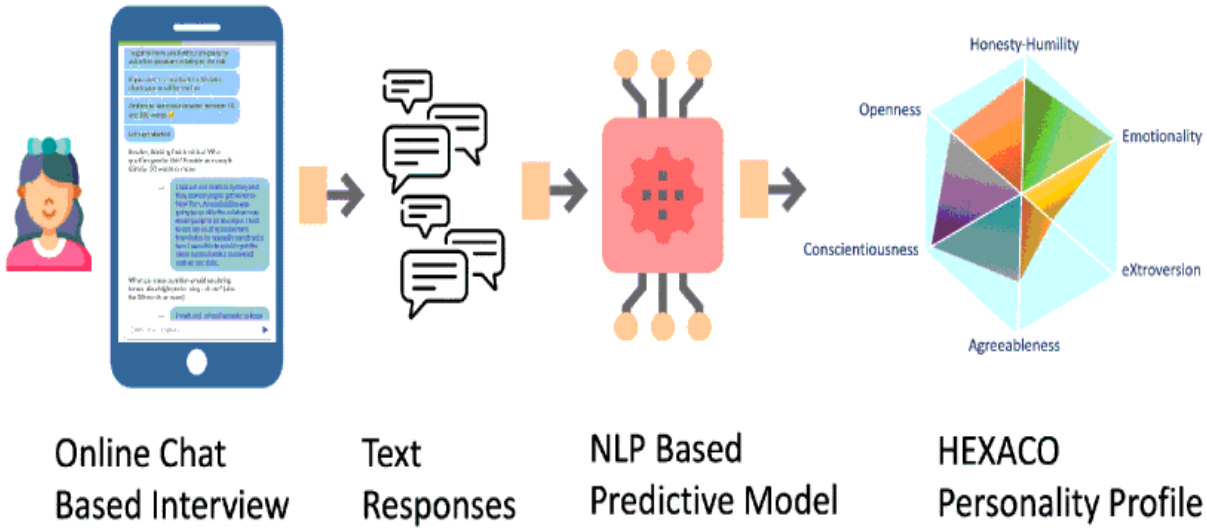
It compasses context of the use of answers of open ended questions to predict the personality of candidathmses using Artificial Intelligence and some Machine Learning algorithms.This paper is limited to predicting the nature of candidate but was able to predict the skills ofthat individual[4].

4. **Personality traits and career satisfaction of human resource professionals**

It shows the personality traits and career satisfaction of Human Resource garduate professionals. The limitations of the model were that it just focused on personality factor and career staisfaction of Human Resource (HR)Managers[2]. The technologies used in their model were Artificial Intelligence and Natural language processing[4].

SYSTEM ARCHITECTURE:-

Our project has three main modules ie. the Admin , the HR and the candidate. So the basic flow of the project is illustrated in the block diagram below.



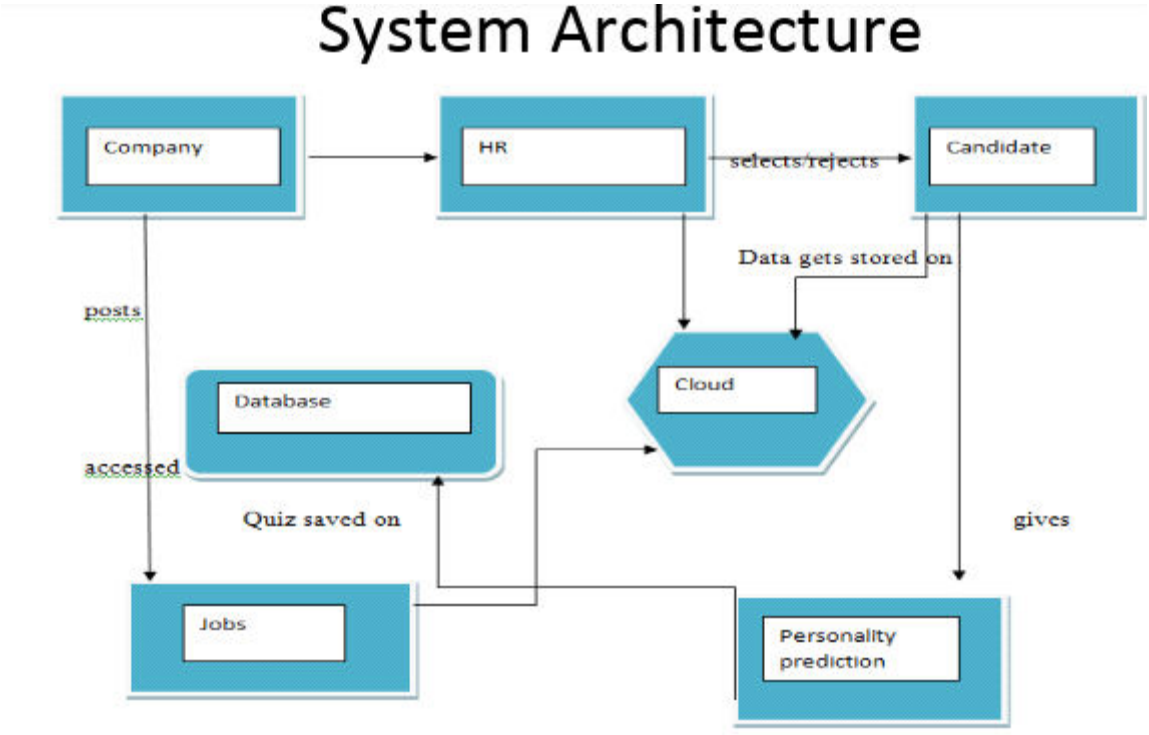
We proposed personality prediction using Artificial Intelligence. This system provides with an expert workforce for the organization which will help the HR department to select the right candidate for the particular job profile. In our society intelligence is highly appreciated. If you have a high IQ, you have a better chance of being successful at school and professional life. Generally, for prediction of personality, psychometric questions are used. The proposed system is developed as an Android application wherein the admin is first needed to login with proper credentials followed by which they can add the questions and can also modify them. The candidate will register her/himself with all the details After that candidate will find one form with different details like skills, experience, batch, and degree. On the basis of above information candidate will have options of different job profile. Then candidate will apply for particular job, then there is a personality of candidate, for this there is a one test which is personality test given by candidate. There is a common myth which says that IQ tests measure intelligence. What an IQ test actually measures are not actual intelligence, but a person's capacity for intelligence.

In this test various situations will be encountered by the candidate ranging from strongly agree to disagree, which is provided as a drop-down list. The factors range like openness to experience, conscientiousness. (Table) shows the sample questions for personality test. Each question has the fix set of choices varying from strongly agree to disagree.

Questions	Openness	Conscientiousness	Extraversions	Agreeableness	Neuroticism
I feel little concern for	-Select- Agree	Agreed	Agreed	Strongly	Disagreed

others	Disagree Strongly Agree Strongly Disagree Neither agree/disagree			Agreed	
I am very prepared					
I like multitasking					
I never get demotivated easily					
I get stressed out very easily					

Our project comprises of the following system architecture and is then followed while implementing the project.



CONCLUSION:-

You can use our AI based personality prediction tool for different purposes :to check the personality of employees, students,candidates, clients,etc. Online personality prediction evaluation allows you to learn more about your target audience,and help them learn more about themselves as well- so they can see which of the mistakes can be a part of de selection while the recruitment system.The major approaches utilized in the domain of recognition of Personlity Traits are through the previous decade have been analyzed in this project. Various pre processing, segmentation methods, feature extraction process, classification techniques are used. Although, different techniques for predicting of the personality have developed in previous decades, still a lot of research is needed so that a practical software solution could be made accessible

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