# Candidate HR Assessment Tool using AI.

Dr. AnkitaKarale, Shraddhapatil[1], Archanadhomse[2], Aartijadhav[3], Dhanashrigangurde[4]

[1,2,3]Departmentofcomputerandscienceengineering
Sandip institute of technology and research Centre, Nashik ,Maharashtra

## ABSTRACT

CandidateHRAssessmentToolsystemwillhelptheHR departmenttoeasilyshortlistthecandidatebasedonthe CVranking policy. This system will focus not only in qualification and experience but also focuses on other importantaspects which are required for particular job position. This system will help the human resource department to selectright candidate for particular job profile which in turn provide expert workforce for the organization. Candidate herewill register him/herself with all its details. Candidate can also fill an online form in that Resume details, hobbies,strengths, weakness, or our side 15 to 16 analysis on questions After completing these entire things system shortlisttopcandidatesandAutomailsendtocandidate sitalsopresentstheworkdoneresultoftheemployeetot heManagerwhoevaluatesthetopemployeesbasedonw orkefficiencyandeasilyshortlistcompany'semployee of theyear.

**Keywords:**Personalityprediction,ArtificialIntellige nce,Neuro-LinguisticProgramming(NLP).

## I. INTRODUCTION

The proposed system will enable a more effective way to shortlist submitted candidate from a large number of applicantsproviding a consistent and fair CV ranking policy. This can be legally justified. System will rank the experience and key skillsrequiredforaparticularjobpositionthansystemw illrankthecandidatesformbasedontheexperienceando therkeyskillswhichare required for particular job profile. This system will help the HR department to easily shortlist the candidate based on the fillinformationingivenformformatorpersonalitypred ictiontestsrankingpolicy.Wepresentasetoftechniquest hatmakesthewholerecruitment process more effective and efficient also. We have implemented a system that ranks the top employee based on workfeedbackpolicyaswellassuggestions.Todayther eisagrowinginterestinthepersonalitytraitsofacandida tebytheorganizationto better examine and understand the candidate's response to similar circumstances. And in this system HR add some criteria likepersonalityrequired,rolesandresponsibilitiesetc. andsystemareexaminedautomaticallytocandidatesar efeettoallthesecriteriaor not for this, the system conducts a personality prediction test to determine the personality traits of the candidate. Finally, itpresents the results of the candidates to the recruiter who evaluates the top candidates and shortlists the candidate. In this project,we will register him/her with all resume details, hobbies, strengths, weakness and 15 to 16 questions for personality prediction inthat HR analyzed the Candidates Openness(O), Conscientiousness(C), Extraversion(E)Agreeableness (A) means is one of the fivepersonality traits of the Big Five personality theory. A person with a high level of agreeableness in a personality test is usuallywarm,friendly,andtactful.Theygenerallyhave anoptimisticviewofhumannatureandgetalongwellwi thothers.Neuroticism (N)MeansisoneoftheBigFivehigher-orderpersonalitytraitsinthestudyofpsychology.Indiv idualswhoscorehighonneuroticismaremorelikelytha naveragetobemoodyandtoexperiencesuchfeelingsas anxiety,worry,fear,anger,frustration,envy,jealousy, guilt,depressedmood,andloneliness,whichwillbefurt her,usedbythesystemtoshortlisttheirCVorcandidates .After completing the think top 10 or above shortlisted candidates has auto mail are sent. of electronic technology and internet ledto the inclination of the global Smart TPO tools is apparently supported by and provided with more opportunities by thedevelopment of Job Characteristics Model (JCM) which in turn is based on the concept of modern job design. Fortunately, thedevelopmentinmoderninformationsystem,digital technologies,theuniversalaccessHumanResourceMa nagementdevelopmentandmakethesystemmoreappli cable.Followingthetrend,theproposedsystemtriestod esignaplantointegrateJobCharacteristicsModel into HR system to search forinto HR system to search

for a new model of efficient operation on Human ResourceManagementintheInternetAge.

## II.   LITERATURE SURVEY

In 2014 an Integrated E-Recruitment System for Automated Personality Mining and Applicant Ranking was proposed byFaliagka et al. an automated candidate ranking was implemented by this system. It was based on objective criteria that thecandidate's details would be extracted from the candidate's LinkedIn profile. The candidates' personality traits wereautomatically extracted from their social presence using linguistic analysis. The candidate's rank was derived from individualselection criteria using Analytical Hierarchy Process (AHP), while their weight was controlled by the recruiter (admin). Thelimitations of the system were that senior positions that required expertise and certain qualifications were screened inconsistently[1].Liden et al. published The General Factor of Personality: The interrelations among the Big Five personality factors(Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism) were analysed in this paper to test for theexistence of a GFP. The meta-analysis provides evidence for a GFP at the highest hierarchal level and that the GFP had asubstantive component as it is related to supervisor-rated job performance were concluded by this paper. However, it is alsorealized that it is important to note that the existence of a GFP did not mean that other personality factors that were lower in thehierarchylost their relevance.

[2]     Twitpersonality: Computing personality traits from tweets using password embeddings and supervised learning. In 2018, GiulioCarducci et al. Presented a supervised learning approach to identify personality traits through an individual's tweets. They usedmy Personality and Twitter datasets for their work and word embedding used as a vectorizer. SVM (Support Vector Machine),Linear regression,andLassoclassificationmodelsare usedandconcludedthat    linear    regression performstheworse.

[3]     Instagram addiction and the Big Five of personality: The mediating role of self-liking. K. Kircaburun and M. D. Griffithsexplored the associations among personality, daily usage of the internet, self-seeking, and Instagram addiction. The sample size isN=752 these are university students who completed a survey report that contains FFM inventory, Instagram addiction, and self-seeking scale. They concluded that daily usage of the internet was negatively related to Instagram addiction    eitherself-seeking,consciousness,and

agreeablenessarethree factorsthat werenegatively relatedtoInstagram addiction.

[4]     Machine intelligence-based personality prediction using social profile data. Rohit GV et al. predict personality usingFacebook status that can be shared by users on their profiles. They used the BIG5 model and Random Forest Classifier for theirresearchand    achieved64.25%accuracyor5.25 meansquare    errorwas    achievedbyusingarandom forest regressor.

[5]     Personalitytraitsrecognitionon socialnetworkfacebook.,In2013,Alametal.contribut etothefieldof personalitypredictionand compare the performance of different classification methods also concluded that MNB (Multinomial Naive Bayes) performsbetterascomparetoSMO(Sequentialminima loptimization)andBLR    (Bayesian LogisticRegression.

[6]     Predicting personality from twitter. In 2011, Golbeck et al. collected 2000 recent tweets of users and perform text analysis.Theychoosethe BIG5modelandanalyze    tweetstext throughtwomethodsLIWC(LinguisticInquiry andWordCount)andMRC    psycholinguistic database. When the features are obtained, they apply two different machine learning algorithms forpersonalityprediction(ZeroandGaussianprocess).

## III.   SOFTWARE ARCHITECTURE

Our proposed system work as follows;

Admin: firstly admin can add, update, delete HR associate, HR, also add manager and view complaint/feedback/suggestion and also view the top employee of firm.

HR Associate: Main role of HR associate is, he will add job title(vacancy) with required personality, roles and responsibilities. They will view top 10 employs of their firm.

HR: HR will view top 10 shortlisted candidate who will qualify the HR round and eligible for the required job or post and send auto mail to shortlisted candidate HR will also view the top employees of their firm.

Candidate: candidate can view the job title of firm which is posted by HR associates. Candidate can apply for job which is suitable for him and enter his hobbies, strengths, weakness and also answer the 15 to16 questions.

Manager: selected candidate will be add, view/delete as employee by manager. After candidate recruitment the manager approve the work done to their employee. View top employees based on work done efficiently.

Employee: Selected candidate by appointed by manager and do the task assigned by

manager. The work done has some type as, start date, end date, deadline of that work done all these fields are ordered by manager Employee can add

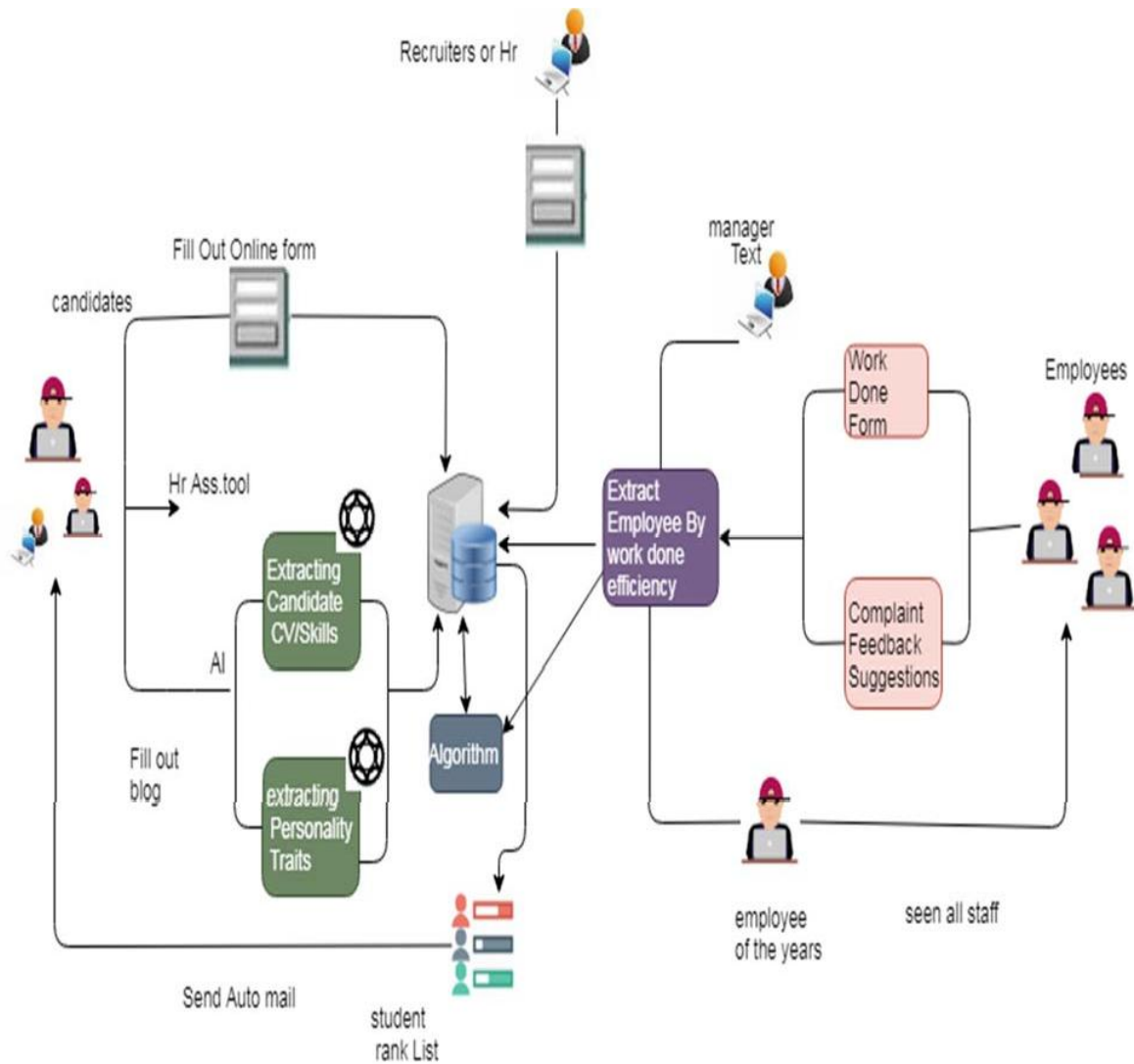complaints or feedback and also view the top 10 employee of the firm.



**Fig.Softwarearchitecture**

# IV. RESULT

.

| Name | O | C | E | A | N |
|------|------|------|------|------|------|
| Shraddha | 4.12 | 3.48 | 3.33 | 3.42 | 2.7 |
| Aarti | 4.18 | 3.5 | 3.33 | 3.49 | 2.64 |
| Archana | 4.08 | 3.58 | 3.43 | 3.54 | 2.62 |
| Dhanashri | 4.1 | 3.47 | 3.45 | 3.48 | 2.65 |

Table1:predictedscoresbased onthestatusscraped

Thegivenvaluesintablearepredictedpersonalityvalue softheuser from a scale of 1-5, 1 being low and 5 being high. EachcolumninthetablerepresentsoneoftheBig5Traits. Foreachstatuspersonalitytraits(OCEAN)arecalculatedusingthe test set and these scores are then being stored onto theMongoDB. Calculated values for each scraped status is shownin table 2. It summarizes the calculated values of OCEAN forfive user's profiles. The process of calculating the personalityvalues – i.e., predicting the personality using the built model issummarized on giventestprofilesisshownintable 1.

| Name | O | C | E | A | N |
|------|------|------|------|------|------|
| Shraddha | 40.69 | 41.67 | 35.29 | 45.1 | 58.82 |
| Aarti | 60.78 | 48.04 | 36.27 | 55.88 | 44.61 |
| Archana | 37.75 | 72.55 | 62.25 | 59.8 | 39.22 |
| Danashri | 37.75 | 39.71 | 63.73 | 55.39 | 47.06 |

Table2:ThepercentileOCEAN values

Table2givesthepercentilenormalizedpredictedvalues (outof100)ofpersonalityoftheuser,1beinglowand100 beinghigh.Each column in the table represents one of the Big 5 TraitsScreenshotofthewebapplicationdevelopedforvalidatingthemethodofpersonality predictionisgiveninfigure.Thisscreenshotreferstothe UIwhichwedevelopedusingPHP,HTML,andCSSinordertoshowthescorespredictedtotheuser.

## VI.    CONCLUSION

This system will automatically determine the key skill characteristic by defining each expert's preferences and rankingdecisions. The presented system automates the processes of requirements specification and applicant's ranking. This system willenable a more effective way to short list submitted candidate CVs from a large number of applicants providing a consistent andfair CV ranking policy. The proposed system produces ranking decisions that were relatively highly consistent with those of thehuman experts. The proposed system will enable a more effective way to short list submitted candidate from a large number ofapplicants providing a consistent and fair CV ranking. In this project, we have implemented an organization-oriented recruitmentsystem that would assist the human resource department in short listing the right candidate for a specific job profile and alsoshortlist the employee of the year. The system would be used in many business sectors that will require expert candidate, thusreducingthe work loadof thehuman resourcedepartment.

## REFERANCE

[1].    E. Topes and R. Christal. Recurrent personality factors based on trait ratings. Journal ofPersonality, 60(2):225251, 1992.

[2].    R. McCrae and O. John. An introduction to the five-factor model and its applications. JournalofPersonality,60(2):175215, 1992.

[3].    O.P.JohnandS.Srivastava,Thebigfivetraittaxo nomy:History,measurement,andtheoreticalpe rspectives,Handbookofpersonality:Theoryan dresearch,vol.2,no.1999,pp.102138,1999.

[4].    P. T. Costa and R. R. McCrae, Normal personality assessment in clinicalpractice:Theneopersonality inventory.Psychological assessment,vol.4,no. 1, p. 5,1992.

[5].    T. Santamaria and D. Nathan-Roberts, "Personality Measurement and Design in Human-Robot Interaction: A Systematic and Critical Review," Proceedings of the Human Factors and Ergonomics Society Annual Meeting, vol. 61, no. 1, pp. 853–857, sep 2017.       [Online].      Available: http://journals.sagepub.com/doi/10.1177/ 1541931213601686

[6].    L. Robert, "Personality in the human robot interaction literature: A review and brief critique," in Proceedings of the 24th Americas Conference on Information Systems, Aug, 2018, pp. 16–18.

[7].    L. Robert, R. Alahmad, C. Esterwood, S. Kim, S. You, and Q. Zhang, "A Review of Personality in Human–Robot Interactions," {SSRN} Electronic Journal, 2020. [Online]. Available:       https://doi.org/10.2139/ ssrn.3528496

[8].    Y. Mou, C. Shi, T. Shen, and K. Xu, "A Systematic Review of the Personality of Robot: Mapping Its Conceptualization, Operationalization, Contextualization and Effects," International Journal of Human–Computer Interaction, vol. 36, no. 6, pp. 591–605, apr 2020. [Online]. Available:

[9].    Vinciarelli and G. Mohammadi, "A Survey of Personality Computing," IEEE Transactions on Affective Computing, vol. 5, no. 3, pp. 273–291, jul 2014. [Online]. Available:      http://ieeexplore.ieee.org/ document/6834774/

[10].    Five Factor Model of Personality: Goldberg LR, et al. (2006), The international personalityitFempoolandthefutureofpublic-d omainpersonalitymeasures.JResPers40(1):84 96,2006

[11].    V. Kaushal and M. Patwardhan, "Emerging Trends in Personality Identification Using Online Social Networks—A Literature Survey," ACM Transactions on Knowledge Discovery from Data, vol. 12, no. 2, pp. 1–30, mar 2018. [Online]. Available: https://dl.acm.org/doi/10. 1145/3070645

[12].    Y. Mehta, N. Majumder, A. Gelbukh, and E. Cambria, "Recent trends in deep learning based personality detection," Artificial Intelligence Review, vol. 53, no. 4, pp. 2313–2339, apr 2020. [Online]. Available: http://link.springer.com/10.1007/s10462- 019-09770-z

[13].    G.C. Wright, "Current Directions in

Personality Science and the Potential for Advances through Computing," IEEE Transactions on Affective Computing, vol. 5, no. 3, pp. 292–296, jul 2014. [Online]. Available: http://ieeexplore.ieee.org/document/6933966/

[14]. Vinciarelli and G. Mohammadi, "More Personality in Personality Computing," IEEE Transactions on Affective Computing, vol. 5, no. 3, pp. 297–300, jul 2014. [Online]. Available: http://ieeexplore.ieee.org/document/6866147/

[15]. J. C. Silveira Jacques Junior, Y. Gucluturk, M. Perez, U. Guclu, C. Andujar, X. Baro, H. J. Escalante, I. Guyon, M. A. J. Van Gerven, R. Van Lier, and S. Escalera, "First Impressions: A Survey on Vision based Apparent Personality Trait Analysis," IEEE Transactions on Affective Computing, 2019.

[16]. Five Factor Model of Personality: Goldberg LR, et al. (2006), The international personalityitFempoolandthefutureofpublic-domainpersonalitymeasures.JResPers40(1):84 96,2006

[17]. E. Topes and R. Christal. Recurrent personality factors based on trait ratings. Journal ofPersonality, 60(2):225251, 1992.

[18]. R. McCrae and O. John. An introduction to the five-factor model and its applications. JournalofPersonality,60(2):175215, 1992.

[19]. O.P.JohnandS.Srivastava,Thebigfivetraittaxonomy:History,measurement,andtheoreticalperspectives,Handbookofpersonality:Theoryandresearch,vol.2,no.1999,pp.102138,1999.

[20]. P. T. Costa and R. R. McCrae, Normal personality assessment in clinicalpractice:Theneopersonality inventory.Psychological assessment,vol.4,no.1, p. 5,1992.

[21]. T. Santamaria and D. Nathan-Roberts, "Personality Measurement and Design in Human-Robot Interaction: A Systematic and Critical Review," Proceedings of the Human Factors and Ergonomics Society Annual Meeting, vol. 61, no. 1, pp. 853–857, sep 2017. [Online]. Available: http://journals.sagepub.com/doi/10.1177/1541931213601686

[22]. L. Robert, "Personality in the human robot interaction literature: A review and brief critique," in Proceedings of the 24th Americas Conference on Information Systems, Aug, 2018, pp. 16–18.

[23]. L. Robert, R. Alahmad, C. Esterwood, S. Kim, S. You, and Q. Zhang, "A Review of Personality in Human–Robot Interactions," {SSRN} Electronic Journal, 2020. [Online]. Available: https://doi.org/10.2139/ssrn.3528496

[24]. Y. Mou, C. Shi, T. Shen, and K. Xu, "A Systematic Review of the Personality of Robot: Mapping Its Conceptualization, Operationalization, Contextualization and Effects," International Journal of Human–Computer Interaction, vol. 36, no. 6, pp. 591–605, apr 2020. [Online]. Available:

[25]. A. Vinciarelli and G. Mohammadi, "A Survey of Personality Computing," IEEE Transactions on Affective Computing, vol. 5, no. 3, pp. 273–291, jul 2014. [Online]. Available: http://ieeexplore.ieee.org/document/6834774/