

Survey on Efficient and Automated Online Recruitment System

Aniket Jadhav^{*1}, Harsh Bhatia², Saish Wadkar³, Vinod Tak⁴, Dr. Pankaj Agarkar⁵

^{1,2,3,4}Student, Department of Computer Engineering, Dr. D. Y. Patil School of Engineering, Lohegoan Savitribai Phule Pune University, Pune, Maharashtra, India

⁵HOD, Department of Computer Engineering, Dr. D. Y. Patil School of Engineering, Lohegoan Savitribai Phule Pune University, Pune, Maharashtra, India

ABSTRACT

The problem with interviewing and selection of graduated and graduating candidates along with experience candidates is to occupy right job according to their skills and qualifications. And this is the major challenge faced by recruitment team. To overcome this problem, our team accepted this challenge and has purposed a new system, named as – Efficient and Automated Online Recruitment System. This system will make fair decisions on CV / Resume analysis and it will also provide Job Recommendation for shortlisted candidates to HR (Human Resource) department.

Keywords : CV/Resume Ranking, Job Recommendation, Back Propagation Algorithm, Personality Prediction, Neural Network, Machine Learning, Organisation Specific

I. INTRODUCTION

Efficient and Automated Online Recruitment System is a combination of two different systems, that is, Test System and Prediction System. First System (Test System) is all about Aptitude Test and Psychometric Test. And second system (Prediction System) is all about CV / Resume Analysis along with Job Recommendation.

Aptitude Test comprises of two sections, that is, Quantitative Test and English Test. And Psychometric Test comprises of Big Five Theory Model having five different parameters – Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism.

This system is a two way system with Admin-Login and User-Login credentials. After matching of respective credentials, the system will allow Admin-Login or User-Login to proceed for further tasks.

- Admin Login Is allowed creating Aptitude Test and Psychometric Test along with their correct answer(s). He / She can add, delete, edit or update the question bank, if required. Admin is also allowed to view the test results of candidates who appeared for the tests. And based on their test scores, admin will shortlist the candidates who are fitting in the recruitment criteria.
- User Login At first, candidate(s) need to register themselves to appear for respective online recruitment test. After that, they are allowed to proceed for the test. Candidates need to browse and upload their respective CV / Resume.



Figure 1:- System Architecture

Client can be Mobile / Desktop / PC. It is mandatory for client to have operatable Internet Web Services to get access into the system.

Client can be Admin or User. And details of client are stored in a database which will be helpful for checking login credentials. Also, database will store the data of Test System and Prediction System.

II. LITERATURE SURVEY

In this section we have discussed the literature view of already existing online recruitment system.

Dr. Nedhal A. Al-Saiyd and Amjad S. Al-Takrouri [1] proposed a system named as - Prediction of IT Jobs Using Neural Network Technique. In this model, they are predicting IT Jobs for candidates based on their knowledge, experience and key skills using back propagation Artificial Neural Network (ANN) . To screen the result, they have gathered dataset of 50 graduated students and used it in multi-layer feed-forward neural networks which uses back-propagation algorithm models and are arranged in with 35 specified input factors. Parameters for testing and 35 input

factors for training of 50 candidates that cover IT job skills.

Md. Tanzim Reza and Md. Sakib Zaman [2] proposed a model named as- Analyzing CV / Resume using Natural Language Processing and Machine Learning. In this model, they are fetching necessary information from their semi-structured text data format in a CV or Resume and ranking it as per preferences instructed by associated company along with certain requirements. Their system works in three phases, that is, Segmenting CV / Resume, Extraction of useful data in structured format from the unstructured data, and Evaluation of structured data by various algorithms such as – Decision Tree and then training their system.

Allan Robey, Kaushik Shukla, Kashish Agarwal, Keval Joshi, and Prof. Shalmali Joshi [3] proposed a system named as – Personality Prediction System through CV Analysis. This system conducts online aptitude test and personality test which helps to predict the personality of candidate and short-listing of candidate with respect to their skills and decision making ability.

Mayuri Pundlik Kalghatgi, Manjula Ramannavar, and Dr. Nandini S. Sidnal [4] purposed a model named as – A Neural Network Approach to Personality Prediction System based on the Big-Five Model. This system works with respect to four modules, that is, Data Collection, Pre-processing, Transformation, and Classification. And their system completely runs on Hadoop. Their work predicts the personality traits of an individual via Big-Five Model.

The discussion of above survey is normalized in tabular format as follows,

CD	DADED NAME		METHOD DRODOGED	ΙΙΜΙΤΑΤΙΟΝ	
SR.	PAPEN NAME	AUTHOR	METHOD FROPOSED	LIMITATION	
NO.				S	
1.	Prediction of IT Jobs	Dr. Nedhal A. Al-Saiyd	Back Propagation	No online aptitude	
	Using Neural	Amjad S. Al-Takrouri	Artificial Neural	and psychometric test.	
	Network Technique		Network using multi-		
			layer feed-forward		
			neural network.		
2.	Analyzing CV /	Md. Tanzim Reza	Segmenting, Extracting,	No online aptitude test	
	Resume using Natural	Md. Sakib Zaman	and Evaluating	and psychometric test.	
	Language Processing		unstructured data	And no job	
	and Machine		format into structured	recoomendat-ion.	
	Learning.		data.		
3.	Personality	Allan Robey, Kaushik	Conducted an online	No job	
	Prediction System	Shukla, Kashish	aptitude and	recommendation.	
	Through CV /	Agarwal, Keval Joshi,	psychometric test		
	Resume Analysis.	and Prof. Shalmali Joshi			
4.	A Neural Network	Mayuri Pundlik	Data Collection, Pre-	No online aptitude	
	Approach To	Kalghatgi, Manjula	processing,	test and job	
	Personality	Ramannavar, and Dr.	Transformation and	recommendation	
	Prediction System	Nandini S. Sidnal	Classification. And it	system.	
			predicts the personality		
			traits of the candidates.		

III. Taxonomy Chart

	Job Recommendat ion	Aptitude Test	Psychometric Test	CV / Resume Analysis	Short-listing Of CV / Resume
Prediction of IT Jobs Using Neural Network Technique.	\checkmark	X	X	\checkmark	\checkmark
Analyzing CV / Resume Using NLP and ML	X	X	X	\checkmark	\checkmark



IV. CONCLUSION

The purposed system has additional functionalities as compared to other existing online recruitment system and the purposed system justifies this comparison in Taxonomy Chart. After studying and understanding some other online recruitment system, we can conclude that the purposed system is feasible in all three formats, that is, Market Feasibility, Technical Feasibility and Financial Feasibility.

V. ACKNOWLEDGEMENT

It gives us a great pleasure in presenting the paper on Efficient and Automated Online Recruitment System. We would like to thank Dr. Pankaj Agarkar, Head of Computer Engineering Department, DYPSOE (SPPU-PUNE), for giving us all the help and support we needed during course of the Paper writing work. We are really grateful to him.

VI. REFERENCES

- [1]. Rayland E.K and Rosen B "Personnel Professionals Reactions to Chronological and Functional Résumé Formats", 1987
- [2]. Malamitsa, Kokkotas, and Kasoctas,
 "Graph/Chart Interpretation and Reading Comprehension as Critical Thinking Skills",
 2008
- [3]. Kleinbaum and Klein "Analysis of matched data using Logistic Regression", 2010
- [4]. Callum and Nigam "A comparison of event models for Naive Bayes text classification", 1998
- [5]. F Evanthia and T Athanasios "An integrated Recruitment System for automated personality mining and Applicant ranking", 2012
- [6]. L D. van der and Nijenhuis "The General Factor of Personality: A meta-analysis of Big Five intercorrelations and a criterion-related validity study", 2010
- [7]. F. Safia and N Asha "the Impact of Person Organization Fit on Job Satisfaction and Performance of the Employees", 2004
- [8]. I Ilke and W Peter "Personality and Job Engagement", 2011

- [9]. D Tantam "The machine as psychotherapist: impersonal communication with a machine", 2017
- [10]. Crist 'obal Romero "Educational Data Mining: A Review of the State of the Art", 2010
- [11]. Barrick, M. R., and Mount, "The Big Five personality dimensions and job performance: A Meta analysis"1991
- [12]. Ree, M. J, and Earles "Intelligence is the best predictor of job performance", 1992
- [13]. Schmidt, F. L, and Hunter "Employment testing: Old theories and new research findings", 1981
- [14]. Shen, Brdiczka, and O Liu "Understanding Email Writers: Personality Prediction from Email Messages", 2013

Cite this article as :

Aniket Jadhav, Harsh Bhatia, Saish Wadkar, Vinod Tak, Dr. Pankaj Agarkar, "Survey on Efficient and Automated Online Recruitment System", International Journal of Scientific Research in Computer Science, Engineering and Information Technology (IJSRCSEIT), ISSN : 2456-3307, Volume 4 Issue 8, pp. 13-17, September-October 2019. Journal URL : http://ijsrcseit.com/CSEIT19484