

# Resume Evaluation System based on AI

Rutuja Patil<sup>1</sup>, Pratiksha Sarvade<sup>2</sup>, Ajinkya Patil<sup>3</sup>, Yash Bhosale<sup>4</sup>

<sup>1</sup>Rutuja Patil, student at Padmabhooshan Vasantdada Patil Institute of Technology, Pune, Computer Department

<sup>2</sup>Pratiksha Sarvade, student at Padmabhooshan Vasantdada Patil Institute of Technology, Pune, Computer Department

<sup>3</sup>Ajinkya Patil, student at Padmabhooshan Vasantdada Patil Institute of Technology, Pune, Computer Department

<sup>4</sup>Yash Bhosale, student at Padmabhooshan Vasantdada Patil Institute of Technology, Pune, Computer Department

\*\*\*

**Abstract** - Selecting desirable applicants for an organization is one of the major challenges in human resource management. Resume evaluation for recruitment process is very important activity in IT industries for hiring and seeking new employees with required skills. Fortunately, the development in modern information system, digital technologies, the universal access of electronic technology and internet led to the inclination of the global Human Resource Management development and make the system more applicable. In this project, we present a set of techniques that makes the whole recruitment process more effective and efficient. We have implemented a system that can be used to evaluate and classify the resumes. System ranks the resumes based on various aspects like qualifications, skills etc. Finally, it presents the results of the candidates as classified and selected resumes to the recruiter automatically without manual parsing. The results demonstrated that the designed system identifies the current demand on talent-seeking and quickly presented candidate rankings for a specific position, thereby fulfilling the needs of talent-seeking recruiters.

**Keywords:** Artificial Intelligence, Natural Language Processing, Classification techniques...

## 1. INTRODUCTION

This paper reviews Artificial Intelligence (AI) approaches for automating the HR activities in recruitment process. It focuses on parsing the candidates' resumes and shortlisting them as selected or rejected. The main concern is that to analyze the resume through various types of aspects and finally shortlisting them on the basis of their analysis. We have designed a system which classifies the resumes' of applying candidates by considering the skill sets, interests and work experience mentioned in the resume of the candidates[1]. This system represents better visualization of the selection results by using data visualization techniques. Data visualization speeds up the decision-making process in while conforming the screening of those shortlisted resumes in effective way. Hence, we can find, this system will lead the resume evaluation system towards fully automated procedure.

## 2. Problem Statement

To build a smart and automated Resume Evaluation System based on AI to overcome the manual Resume Evaluation techniques for classifying and shortlisting desired applicants effectively.

## 3. Solution

This paper talks about smart and automated Resume Evaluation system, that reduces the HR activities along with the technologies used in it. This system consists of four components which uses Natural Languages Processing[5], Spacy[4] and Classification techniques[6] to perform the various activities like parsing the CV, analyzing the results, generating list of shortlisted candidates. These activities are performed on the stored resumes and generate better way to handle the resume screening.

### 3.1 System Components

The following components were used:

- Information Extraction
- Resume Analysis
- Resume Classification
- Result visualization

System Components are as mentioned in Fig:1 below.

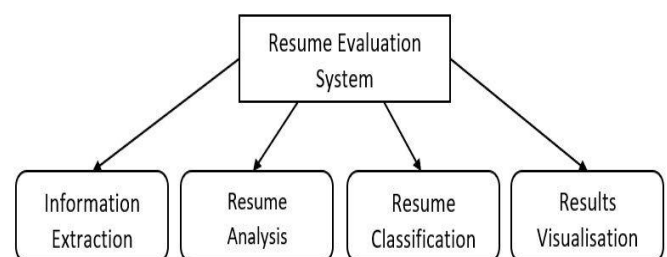


Fig -1: System Components

### 3.2 System Architecture

Architecture of the system will look as mentioned in Fig:2 below. It represents the flow of the entire resume evaluation process.

Main module of the system consists of four modules as Information Extraction, Resume Analysis, Resume Classification and Results Visualization. Candidates' resumes and evaluation criteria are the inputs to the system and stored in the system database. Information extraction is conducted on those resumes to extract relevant data and eliminate the unwanted data. Classification is performed on that data using classification criteria existing in database. Classification results in the shortlisted resumes. Entire results are then displayed to the users.

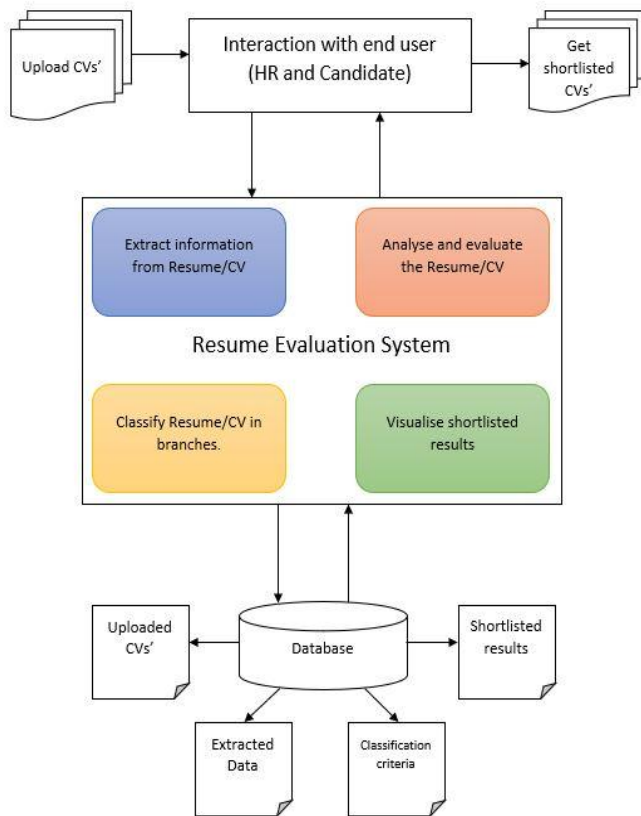


Fig -2: System Architecture

### 3.3 Information Extraction

The innovation in the field of Natural Language Processing and AI has been really helpful in this case with reference[2]. The ability to understand unstructured written language and extract important information from it is exactly what is needed to analyze any written documents such as resume papers just like human being.

### 3.4 Resume Classification

Document Classification is a very prominent area, it is applicable for a diversity of novel applications[3]. As referred from[1] the classification module[5] is responsible for the

classification of the tokens into suitable domain, so that a resume can be labeled as selected or not.

Classification Model generated in classification stage is as shown in Fig. 3 below. Rectangles represent the decision nodes and ovals represent s the final classification label assigned to the candidate CV.

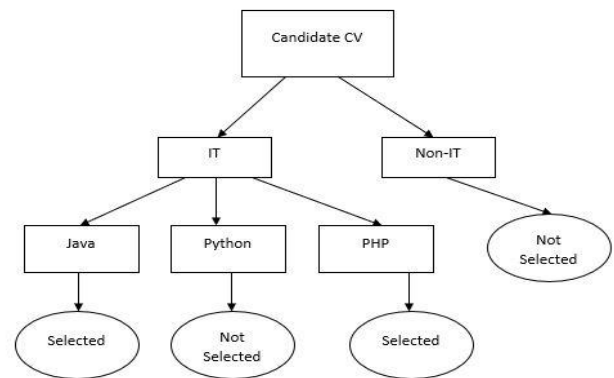


Fig -3: Classification Model

## 4. CONCLUSION

The field of artificial intelligence is gaining momentum especially in this new era of advanced computing. Various fields such as Assessments and Analysis are now taking advantage of this field to optimize the analysis activities. The system not only saves businesses personnel costs but also mitigates the limitations of time and space using the Internet. It produces a final report that is delivered to both the job recruiting company and job applicant and can serve as a reference for both parties to understand each other's needs, thereby facilitating achievement of a win-win situation.

## ACKNOWLEDGEMENT

This project work is completed under the guidance Prof. S. C. Chaudhari and Computer Department of Pd. Vasantdada Patil Institute of Technology, Pune.

This is a sponsored project by CoReCo Technologies Pvt. Ltd. Ideas, designs and outcomes of this project are intellectual property (IP) of CoReCo Technologies Pvt. Ltd. It recommended that any re-use of same in any form, is allowed only with written permission from CoReCo Technologies Pvt. Ltd. (info@corecotecnologies.com).

**REFERENCES**

- [1] Suhas Tangadle Gopalakrishna, Vijayaraghavan Varadharajan Infosys Limited, Bengaluru, India AUTOMATED TOOL FOR RESUME CLASSIFICATION USING SEMANTIC ANALYSIS M. Young, The Technical Writer's Handbook. Mill Valley, CA: University Science, 1989.
- [2] Tanzim Reza, Md. Sakib Zaman Department of Computer Science and Engineering School of Engineering and Computer Science BRAC University Analyzing CV/Resume using Natural Language Processing and Machine Learning.
- [3] Shabna Nasser, Sreejith C, Irshad M Calpine Labs Calpine Labs Calpine Labs UVJ Technologies, Kochi UVJ Technologies, Kochi UVJ Technologies, Kochi Govt Engg. College, Palakkad Govt Engg. College, Palakkad, India Convolutional Neural Network with Word Embedding Based Approach for Resume Classification.
- [4] Xavier Schmitt, Sylvain Kubler, Jeremy Robert, Mike Papadakis, Yves LeTraon University of Luxembourg, Luxembourg Replicable Comparison Study of NER Software:StanfordNLP, NLTK, OpenNLP, SpaCy, Gate.
- [5] Abeer Zaroor, Jenin, Mohammed Maree, Muath Sabha Information Technology Department, The Arab American University Jenin, Palestine. JRC: A Job Post and Resume Classification System for Online Recruitment