Job Portal using Data Mining Techniques for Adaptive Analysis

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Abstract— The project Job portal is aimed at developing a and central Recruitment Process System for the HR(Human Resource) Group of a company. It provides the candidate's ability to register to this application and search for jobs, manage their accounts. In this project we will use various data mining methodologies to analyze a field of interest/brilliance of an individual. We use various strategies to determine the ideal potential of an individual by conducting various aptitude tests. Unlike traditional job portals, we aspire to create one which can stream the job seekers for the openings specialized in their interests. On the basis of the results incurred, data mining strategies will be used to shortlist the companies giving suitable openings. This will also help the companies tied up with the portal to shortlist the candidates to fill the vacancies. The potential of the candidate will be filtered through data mining. This in turn will facilitate the correspondence between candidate and companies.

Key words: Job Portal, Data Mining, Adaptive test

I. INTRODUCTION

Unemployment and overqualified jobs both have become a serious issue for which we need to come up with a solution. According to recent studies the internet has around 1 billion users. This makes a online job portal easily available to everyone. A Job Portal provides the candidate's ability to register to this application and search for jobs, manage their accounts. Each and every candidate will have their own personal account with their own home page. On the other hand companies that are willing to publish the jobs for their company to candidates can register to the job portal and get their own account created and can post jobs to portal's database.

A recent study suggests enormous amount of data is being created daily. This data contains a lot of useful information that needs to be filtered out for further useful purposes. This process of filtering data is called data mining. There are various techniques used for mining useful data namely clustering decision trees, classification regression etc.

An adaptive aptitude test basically will use data mining techniques to see the potential of the student on the basis of the response recorded.

II. LITERATURE REVIEW

Today's environment being competitive, searching for candidates and acquiring jobs is of utmost importance. There are different means and ways like scanning online job listings, personal contacts, job agency offices, direct telephone calls to employers, etc through which one can seek a job. The following methods are considered to be the traditional (old) ways for recruitment as listed by Marjan Mansourvar and Norizan Binti Mohd Yasin[2] are as follows:

- Advertising in the mass media such as newspapers
- Existing employee contacts
- Employment recruitment agencies
- Advertisement in television and radio
- Workers or professional referrals
- Job fairs
- Schools colleges or universities students services department
- Management Consultants

The above listed job seeking methods are too stressful, challenging and slow and also lack the quality that is required. Furthermore, the applicants also have to consider the amount of time and cost that is required to get the information that is needed, along with the other preparations they have to make.

But now the emerging economy demands the situation to change. Today, various methods are being used by the job seekers to save time. There are now various job portals, online employment exchanges, consultancies, company websites etc. This should indeed make recruitment process time saving, cost effective and at the same time should search out the qualified candidates. With the help of these efficient methods and techniques the recruitment process is made easy. The employers and candidates see things not in terms of what they need, but in terms of best things they want. Finding and recruiting the best quality candidates seems to get more complicated in the coming days. The problem with old job portals is they fail to provide

best class of employment services to job seekers, employers, and recruiters. The proposed system should provide free job search and services. It should be quick, safe and easy to use. The system is meant for the end users -the employer and the candidate.[1]

None of the traditional job portals have an aptitude test that would determine and verify the skill set, potential of the candidate. The An Adaptive test basically will ask a set of questions to the candidate. Based on the responses to this questions the next set of question will be filtered. This process is continued until a the field of interest and field of expertise of the candidate is known. This could be achieved by simple Data mining techniques.

Data mining is considered as an application of machine learning. J. Han and M. Kamber defines Data mining as the process of discovering patterns in data.[3] It refers to the process of discovering new meaningful correlation, patterns and trends from large amounts of data stored in repositories, using pattern recognition technologies as well as statistical and mathematical techniques. Data mining have two primary goals prediction and description :.

- Prediction: It involves predicting unknown or future values using some variables or fields in the data set.
- Description: It involves finding patterns describing the data that can be interpreted by humans.

Clustering is the task of grouping a set of objects in such a way that objects in the same group makes meaningful cluster of objects which have similar characteristics. The clustering technique defines the classes and puts objects in each class, while in the classification techniques, objects are assigned into predefined classes.[4]

III. PROPOSED SYSTEM

The proposed system is a job portal with an offline test series to determine the capability of a person. This Offline test will be an Adaptive test that would consist of various set of questions in clusters. Depending upon the previous set of responses the next set of questions would appear. This will identify the potential of the candidate. This system would be beneficial to both the applicant and the company. The proposed portal will consist of 3 types of logins:

- Admin
- Candidate
- Recruiter/Company

The admin will have access to all the data on the portal, whereas, the applicant and the company access is restricted to their profile only. This would benefit the applicant by not being spammed by job offers which he does not want to take up, and his applications would only be received by companies which offer him jobs in his field. This will also benefit the company as it does not need to cross check if all the documentation is genuine and also, the tedious work of taking the aptitude test would be managed by us.
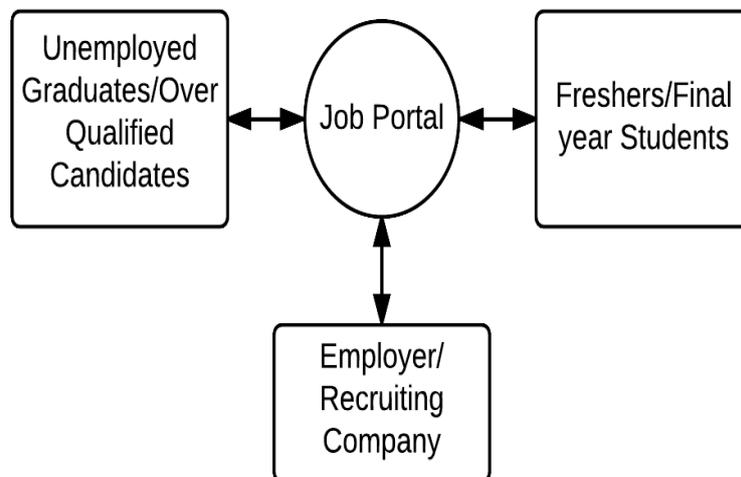

Fig 1: Relationship between the Employee and Employer through job portal

IV. SCOPE

The main scope of this study concerns the selection of tools used and the requirements to be met by the system. This research concerns the development of a knowledge system to implement a job recruitment process. The proposed research tries to provide a new connection between students, unemployed graduates and various companies. This relationship will show us how knowledge-sharing is done through an online system to help students to find dream jobs.

Scope of the systems are as follows:

- Maintain job posting details and generate various recruitments
- Maintain Uploaded resumes.
- Provide customized job postings.
- Maintain Job seeker and Employer Record

V. CONCLUSION

This Project is focused on providing a system that will work on providing a candidate his dream job according to his current skill set. Similarly, An Employer must be satisfied with the quality of employee provided to it though this system. This system basically solves the problem on both ends with certain transparency to protect the privacy. However it is to be noted that this system doesn't guarantees a job to a candidate as it depends on a skill set and vacancies of particular jobs.

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