Open Source Resume

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Abstract: Open source resume is a web-based application to help software development teams to recruit developers based on their open source system contribution activities. This tool provides insights into developers' Practical contributions to open source system projects, which can be useful criteria for judging whether they are suitable for joining the development team based on their different qualifications. To overcome the Empowerment issues many job portals came into existence even though these portals are trying their best we are facing many difficulties to get response from the corporate side, at the same time even corporate human resource people are facing difficulties to find the employee who fits their requirement. Action is needed to overcome these many challenges and make everything easier for the users.

Keywords: Open Source Software; Mining Software Repositories; Developer Expertise; Visualization Tool.

1. INTRODUCTION

Recently, job recommendation has attracted a lot of research attention and has played an important role on the online recruiting website. Different from traditional recommendation systems which recommend items to users, job recommender systems recommend one type of users (e.g., job applicants) to another type of users (e.g., recruiters). In particular, job recommender system is designed to retrieve a list of job positions to a job applicant based on his/her preferences or to generate a list of job candidates to a recruiter based on the job requirements. To obtain a good recommendation results, many recommendation approaches are presented and applied in the JRS. Typically, given a user, existing JRSs employ a specific recommendation approach to generatea ranked list of jobs/candidates. However, different users may have different characteristics and a single recommendation approach may not be suitable for all users.

Therefore, a high-quality JRS should have the capability of choosing the appropriate recommendation approaches according to the user's characteristic. We proposed an approach to construct and visualize developers' OSS biographies based on their contribution activities.
• Based on the approach, a visualization tool was implemented with another main feature of querying for OSS developers based on user's criteria.
• The tool is considered to provide a convenient way to seek suitable developers for constructing development teams in software development.

2. LITERATURE SURVEY

K. Yu, G. Guan and M. Zhou, "Resume information extraction with cascaded hybrid model," In Proceedings of the 43rd Annual Meeting of the ACL, pp. 499-506, Ann Arbor, Michigan, June, 2005.

Functions of paper-
This paper presents an effective approach for resume information extraction to support automatic resume management. In the first pass, a resume is segmented into a consecutive block attached with labels indicating the information types. Then in the second pass, the detailed information, such as Name and Address, are identified in certain blocks (e.g. blocks labelled with Personal Information), instead of searching globally in the entire resume. The most appropriate model is selected through experiments for each IE task in different passes. The experimental results show that this cascaded hybrid model achieves better F-score than flat models that do not apply the hierarchical structure of resumes. It also shows that applying different IE models in different passes according to the contextual structure is effective

Advantage-
Visualization tool was implemented with another main feature of querying for OSS developers based on user's criteria.
Disadvantages-
Advance features are not introduced.

2. S. T. Al-Otaibi and M. Ykhlef, "A survey of job recommender systems,"International Journal of the Physical Sciences, vol. 7(29), pp. 5127-5142, July,2012.

Functions of paper-
Boolean arithmetic is used in this system. Attributes of user are classified into 0 or 1. Key skills that are required by HR are represented by 1 else 0. With the help of this Boolean attribute ranking is made. Higher the rank, better is the customer.

Advantage-
Manual work of HR is reduced.

Disadvantages-
Complex arithmetic hence difficult to implement.

3. Yao Lu , Sandy El Helou , Denis Gillet "A Recommender System for Job Seeking and Recruiting website"

Functions of paper-
In this paper, a hybrid recommender system for job seeking and recruiting websites is presented. The various interaction features designed on the website help the users organize the resources they need as well as express their interest. The hybrid recommender system exploits the job and user profiles and the actions undertaken by users in order to generate personalized recommendations of candidates and jobs

Advantage-
Simple to handle. Saves candidates time.

Disadvantages-
Hectic for HR.

4. Wenxing Hong, Siting Zheng, Huan Wang "A Job Recommender System Based on User Clustering"

Functions of paper-
New concept of clustering was introduced. Cluster can be defines as collection of related data or information. Generalized clusters are formed based on various attributes These clusters are predefined. No new clusters can be added.

Advantage-
No complex arithmetic is required. Simple to implement.

Disadvantage-
No accuracy is achieved.

5 Xin Yang , ErinaMakhira , Kenji Fujiwara , HajmuLida"Open Source Resume (OSR): A Visualization Tool for Presenting OSS Biographies of Developers"

Function Of Paper-
Uses the concept of Clustering. Clusters are in more detailed format. New clusters can also be added. Tree structure of clusters is formed.

Advantage-
Efficient from both sides i.e. companies and employees. No pre-defined clusters.

Disadvantage-
Actual implementation is hectic.

3. RELATED WORK

Social Network Service has been one of the mostpopular topics around the world since the last decade [1]. As aresult of the rapid increase in SNS users, some studies applied data mining techniques to analyse Social Networking Service for exploring trending topics and seeking desirable community for oneself

- Content-based Recommendation

The principle of a content-based recommendation is to suggest items that have similar content information to the corresponding users. For example, in the recommendation that recommending jobs to a job applicant, the content is the personal information and their job desires. While recommending candidates to recruiters, the job description posted by recruiters, including the background description of enterprises, are used as the content for recommendation.

- Collaborative Filtering Recommendation

Collaborative filtering recommendation, known as the user-to-user correlation method, finds similar users who have the same taste with the target user and recommends items based on what the similar users like. The key step in CFR is computing the similarities among users. Collaborative filtering recommendation algorithm can be classified into memory-based and model-based. In the memory-based collaborative filtering recommendation, a user-item rating matrix is usually used as the input [2,3]. Applied in the job recruiting domain, some user behaviors or actions can generate the user-item rating matrix according to the predefined definitions and transition rules.

- Knowledge-based Recommendation

In the knowledge-based recommendation, rules and patterns obtained from the functional knowledge of how a specific item meets the requirement of a particular user, are used for recommending items [5]. For example, employees who have one or more years of work experience exhibit better performance as compared to those without experience.

- Reciprocal Recommendation

Firstly proposed by Luiz Pizzato et al. [4], reciprocal recommender is a special kind of recommender systems. The preferences of all the users are taken into account and need to be satisfied at the same time. A similarity calculation method for calculating the reciprocal value and achieving the reciprocal recommendation based on the explicit preferences obtained from users' resumes and the implicit preferences acquired from the user's interaction history.

4. PROPOSED SYSTEM

Open Source Resume is a web-based application to help software development teams to recruit developers as per their skills.
This tool provides insights into developers' practical knowledge, which can be an useful criteria for judging whether they are suitable for joining the development team based on their different qualifications.
This system is a time-saver in all aspects. Also reduces the complexity.

5. SYSTEM INTRODUCTION

We are developing system which is helpful for job seekers. Main advantage of this application is search is efficient. We have proposed new features which can classify category of user. User can select whether he/she is fresher or experienced. User can upload his/her resume which is shortlisted by admin according to company`s requirements. Admin will contact with H.R. executive. H. R. Will schedule interview for candidate and notify to admin. E-recruiting process is improved.

6. SYSTEM MODULE

1.   Candidate profile
We have created login profile for candidate. Candidate will register to job portal by filling registration form. System will provide login ID and password to candidate. Candidate can sign in to job portal by entering given credentials. Candidate has to fill all details while registering to job portal.

2.   Admin login
This module is designed for admin. Admin will play important role in application. Admin will also have login credential to sign into account. Admin will store all information related to candidate in database. Admin will be intermediate between candidate and H.R. company. Admin will provide all details of candidate to H.R. Similarly, Admin will provide information of company to candidate.

When candidate will apply to any job profile, admin will send candidate`s resume to H.R. Candidate will upload resume which is forwarded by admin to company. When candidate enter their keyskills , admin will search suitable company profile for candidate, and convey message to candidate. If candidate attend interview then admin will update his/her status.

3.   H.R. login
H.R module will be registered and possess credential as H.R. login. H.R. will possess information of candidate. H.R. will schedule interview for candidate. Details of further process will be maintained by H.R.   There is another module i.e. company module. Candidate will search for various companies according to their requirements. All Company name and details will be stored in database.

4.   Application
Candidate will apply through this module. Application of candidate will be stored. Number of companies and name, for which candidate is applying will be stored.
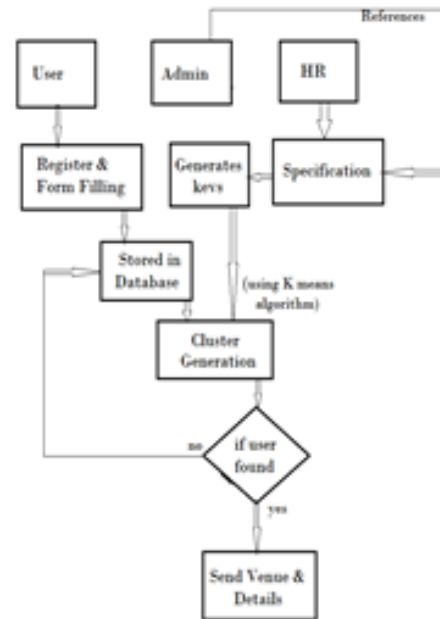
5.   Interview portal
All scheduled and attained interview`s details will be shown in this module.

SYSTEM FEATURES

- Efficient searching
- Reliable Review
- Proper resume building

Block diagram

Algorithm
K-means algorithm:-

- $x_1, \ldots, x_N$ are data points or vectors of observations
- Each observation (vector x_i) will be assigned to one and only one cluster
- $C(i)$ denotes cluster number for the ith observation
- Dissimilarity measure: Euclidean distance metric
- K-means minimizes within-cluster point scatter:

$$W(C) = \frac{1}{2}\sum_{k=1}^{K}\sum_{C(i)=k}\sum_{C(j)=k}\left\|x_i - x_j\right\|^2 = \sum_{k=1}^{K}N_k\sum_{C(i)=k}\left\|x_i - m_k\right\|^2$$

where
m_k is the mean vector of the kth cluster
N_k is the number of observations in k^{th} cluster

- For a given cluster assignment C of the data points, compute the cluster means m_k:

$$m_k = \frac{\sum_{i:C(i)=k} x_i}{N_k}, \; k = 1, \ldots, K.$$

- For a current set of cluster means, assign each observation as:

$$C(i) = \arg\min_{1 \leq k \leq K}\left\|x_i - m_k\right\|^2, \; i = 1, \ldots, N$$

- Iterate above two steps until convergence

7. CONCLUSION

We presented state of the art of job recommendation as well as, a comparative study for its approaches that proposed by literatures. Additionally, we reviewed typical recommender system techniques and the recruiting process related issues. We conclude that the field of job recommendations is still unripe and require further improvements.

FUTURE SCOPE

As part of our ongoing research, we aim to build a new job recommendation approach and test with real data for employee and staffing data from large companies.

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