

Implementation-Ontological Learning for Analysis of User Preferences

Dhanshri Karbhari¹, Priya Sharma², Sharvari Patil³, Sukanya Naikar⁴

¹University of Mumbai, Department of Computer Engineering, Vasai, Thane, Maharashtra, India

²University of Mumbai, Department of Computer Engineering, Vasai, Thane, Maharashtra, India

³University of Mumbai, Department of Computer Engineering, Vasai, Thane, Maharashtra, India

⁴University of Mumbai, Department of Computer Engineering, Vasai, Thane, Maharashtra, India

Abstract: *Ontological researches have been carried out in highly diverse deployment in the past few decades for number of purposes from social networks to e commerce for mapping user preferences and profiles. Apart from this, the ontological approach can be used to map preferences of users on a job portal. Ontological application for online recruitment is now becoming a crucial task for matching job listings and applicants semantically in a highly unstructured semantic web environment using ontology and ontological matching techniques. Most of the current research is focused towards available widespread standards and classifications to build human resources ontology that provides a semantic representation for the positions offered and the best candidates to fill in those places. Some of the other research had been done where they created their own HR Ontology to build recruitment prototype. In the proposed system, we provide a work based mapping for the Ontology. In the work based ontological mapping, the system provides us with exact capabilities which are required for an individual to fetch the job. The job requirements are then matched against the most ontologically suitable profile to get the best match.*

Keywords: User preferences, Generalization, Sampling, Ontological mapping, Implementation

1. Introduction

The Web is the fastest growing medium of information transfer and sharing. Ontology play a major role in supporting the information sharing mechanism by using semantic learning ability and interoperability of the web. Ontological matching is also quite necessary for exchange of information among Semantic Web applications like job postings and crawling.

Ontological researches have been carried out in many distinct areas in the past few decades for innumerable purposes. In all these fields, useful ontological solution insights have been proposed and applied at the same time. However, there are two different types of Ontology. Domain Ontology provide a defined set of structured concepts for determining the applicability in a particular domain; it is applied in areas like jobs, military intelligence, automobiles, etc. and so many other relevant areas. So, domain ontology is relatively huge and can be connected to more and more terms to interrelate. And Theory (or theoretical) Ontology provide a set of terms for describing some aspects of the real world, which can be applied in time, space or plans. Therefore, we can define ontology here as a set of structured concepts in layers or terms and relationships between them in a certain specified domain.

Despite its prevalence, today ontology matching is still done largely by hand, which is a highly error-prone process. The manual matching has now become a huge bottleneck in building scalable information management systems. The advent of technologies like the WWW, XML, and the emerging Semantic Web will further bring in great deal of information sharing applications and exuberate the problem. Hence, the knowledge of tools to hold in the ontology matching style has become arduous for the high on the hog of a wide innovation of idea management applications.

2. Proposed System

Ontology based matching is a technical approach towards finding the relationships between the existing items of two or more different Ontology. The goal of Ontology matching in any type of domain can be reached by developing a number of different techniques. Ontology comparable is an behave to meet face to face the relationships surrounded by the items of two or more antithetical ontology by the agency of ontology agnate techniques. The restriction mapping, agnate and alignment are as a rule used in trade where aggregation of ontology is done.

3. System Architecture

Program architecture is the conceptual ideal that defines the arrangement, style, and in a superior way views of a system. An architecture letter of recommendation is a sticking to one guns description and cross section of a route, qualified in a style that supports reasoning virtually the structures and behaviors of the position is represented in the Figure 1: System Architecture.

3.1 Employee login

The employee has to first create an account. The employee has to then choose preferences while creating his account. Preferences of languages which is good at. After making an account the employee has to upload their resume or CV and also upload the project work or codes which has done. In case, the employee don't want to share his project work the employee can just give basic idea or outline of the project and the company can mail and ask the employee for details of project if they find the project creative. The other users will comment on the uploaded work based on which the employee profile rating will be calculated. For comments there will be user levels.

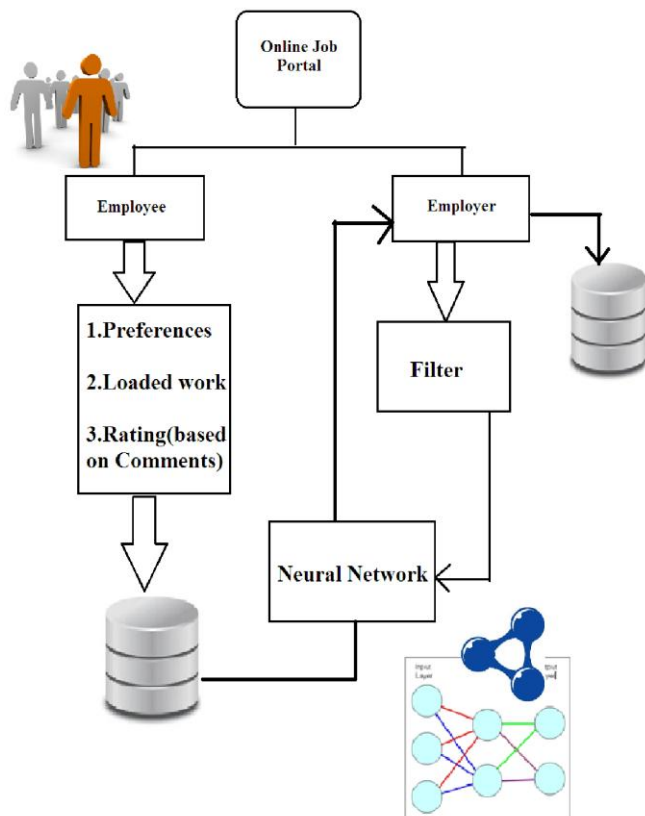


Figure 1: System Architecture

Example: If a FE student post a negative comment of an employee who is Graduate than that comment would not be taken into consideration. The employee can apply for jobs based on his preferences.

3.2 Employer login

It is the company's login. The company can post jobs and can also search for employee. When the employers search for an employee he gets a list of employee in order based on their profile points. This ordered list is based on points calculated on the basis of other user comments, upvotes and downvotes on the uploaded work of user. The employer can then go through the resume of the employee and can hire an employee according to the company's requirements. The employee working in the company can comment on the company and company rating will be calculated. The company rating is included so that the employee can get to know about the positive and negative points of the company and can take decision to join the company or not if the user gets selected for the job. Employer can search for an employee based on company's requirements.

Example: If an employer is searching for java developer will enter java developer in search bar and get an ordered list of users based on profile ratings that had choose java as one of their preferences.

3.3 Profile Points

The employee profile point will be based on many entities. For each preference ratings will be calculated individually and based on those ratings overall rating will be calculated

which is the profile point of the employee. The order list will be based on these profile points. The ratings will be based on the upvotes, downvotes and comments given by other users. The upvotes, downvotes and comments will be considered on basis of user levels which is explained above in employee login.

Example: If a employee profile point is 8 since 6 months and another employee profile point is also 8 but in 2 months so the employee with profile point 8 in 2 months will be displayed first in the list.

If a company shortlist a user for the job the company will send a notification to that user and the user has to reply to the job proposal within the time limit mentioned by the company in the message. If the user does not respond to the message within that time would be automatically rejected.

4. Implementation

The agnate operation determines an alignment A0 for a pair of Ontology O1 and O2. Hence, if a couple of Ontology (which cut back be very easily done and suppress one entity each), the comparable hardship is that of close study an alignment mid these Ontology. There are some distinctive parameters that can equal the choice of word of related, namely:

- (i) The handle of an input alignment A, external which is anticipated extended;
- (ii) The matching parameters, being, weights, or thresholds; the external
- (iii) Basic material, a well known as common development and domain tenacious thesauris

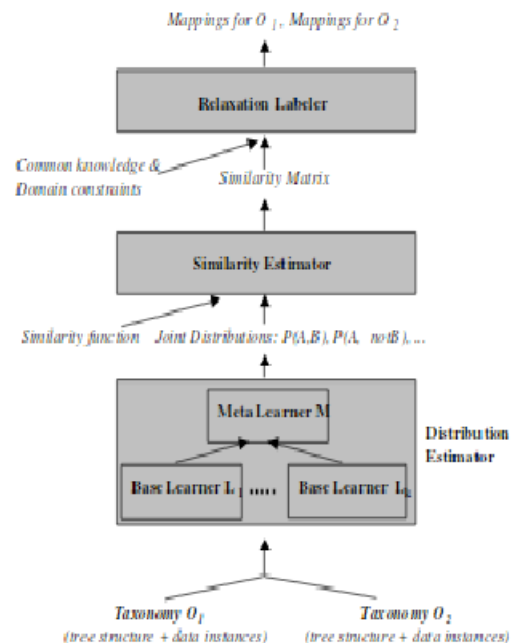


Figure 2: Mapping

Given a decision $t \in T$, its coverage is the proctored exist of assured documents that bring to screeching halt t , and its coverage— is the vest of nix documents that hinder t . We suggest that doubt regularly hand me down in both confident

documents and nix documents are commander terms. Therefore, we desire to classify grain of salt that are preferably frequently used in the changeless documents facing the positive consistent category; and the terms that are greater frequently used in the negative documents directed toward the negative specific category.

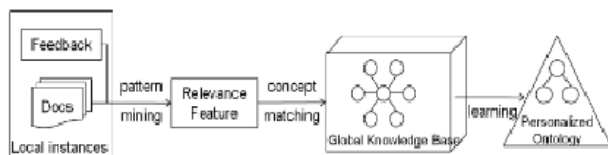


Figure 3: Concept of Matching

5. Conclusions

This proposed system suggests a novel method to address the problems of localized instances and common knowledge mismatches. The user orientated feature set is used to represent user information need and properly match the concepts appearing in global knowledge base. The ontological learning approach thus implicitly used to run and form a cluster for the data. This data helps recruiters find the best person for the job.

References

- [1] P. Mika, "Ontologies are us: A unified model of social networks and semantics", Web Semantics: Science, Services and Agents on the World Wide Web, vol. 5, no. 1, pp. 5-15, 2007.
- [2] R. Sharma, "Analyzing the Role of Semantic Web in Social Networking Sites", International Journal of Engineering Technology, vol. 1, no. 4, 2012.
- [3] X. DU, "A Survey on Ontology Learning Research", Journal of Software, vol. 17, no. 9, p. 1837, 2006.
- [4] V. Eyharabide and A. Amandi, "Ontology-based user profile learning", Applied Intelligence, vol. 36, no. 4, pp. 857-869, 2011.
- [5] A. Maedche and S. Staab, "Ontology learning for the Semantic Web", IEEE Intelligent Systems, vol. 16, no. 2, pp. 72-79, 2001.
- [6] M. Johnson and K. Rokhsaz, "Using Artificial Neural Networks and Self-Organizing Maps for Detection of Airframe Icing", Journal of Aircraft, vol. 38, no. 2, pp. 224-230, 2001.