V.S.B.ENGINEERINGCOLLEGE, KARUR

Department of Electronics and Communication Engineering

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LITERATURE SURVEY

TITLE : **Skill and Job Recommender**

DOMAIN NAME : **Cloud Application Development**

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ABSTRACT

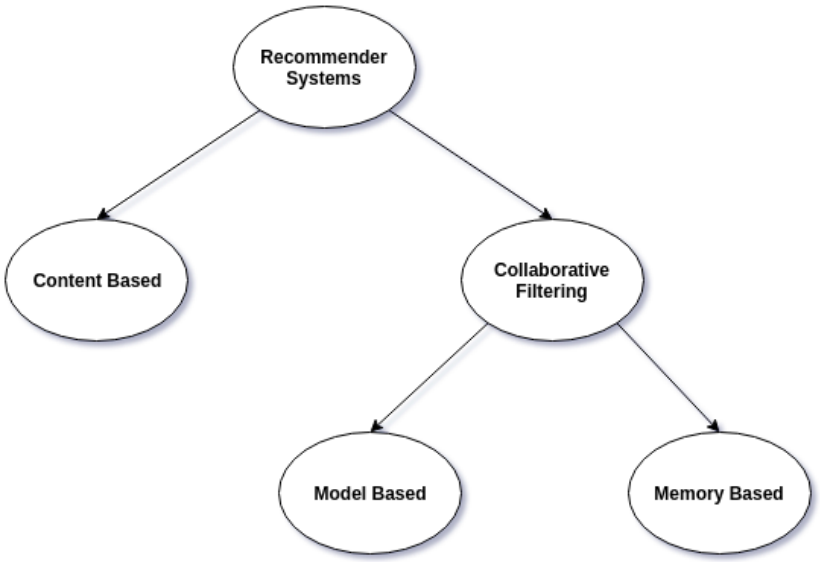
This paper presents a job recommender system to match resumes to job descriptions (JD), both of which are nonstandard and unstructured/semi-structured in form. First, the paper proposes a combination of natural language processing (NLP) techniques for the task of skill extraction. The performance of the combined techniques on an industrial scale dataset yielded a precision and recall of 0.78 and 0.88 respectively. The paper then introduces the concept of extracting implicit skills the skills which are not explicitly mentioned in a JD but may be implicit in the context of geography, industry or role. To mine and infer implicit skills for a JD, we find the other JDs similar to this JD. This similarity match is done in the semantic space. A Doc2Vec model is trained on 1.1 Million JDs covering several domains crawled from the web, and all the JDs are projected onto this semantic space. The skills absent in the JD but present in similar JDs are obtained, and the obtained skills are weighted using several techniques to obtain the set of final implicit skills.

INTRODUCTION

Formal job search and application typically involves matching one's profile or curriculum vitae (CV) with the available job descriptions (JD), and then applying for those job opportunities whose JDs are the closest match to one's CV, and also considering his/her needs, constraints, and aspirations A few of the things that a person may consider while doing this

matching are: a) required skills mentioned in the JDs and skills possessed by self, b) current salary versus salary offered in the new job, c) future prospects after joining the new job, etc. Some of the entities are easy to extract from a JD, for example, the salary offered in a job. However, some other entities, for example, skill extraction (are Python and Java an animal and an island in Indonesia, respectively, or two object-oriented programming languages) and future prospects of a company (it is subjective as well as dependent upon market conditions), need serious consideration.

LITERATURE SURVEY



E-recruitment platforms

The e-recruitment is a system for quickly reaching a large set of potential job-seekers. E-recruiting has attractive growth since the late 1990s when the rapid economy changes produced a high demands for qualified candidates that the labor market could not fully satisfy. The e-recruiting platforms such as corporate homepages and job portals (for example monster.com) have driven this development. The International Association of Employment websites mention that there are more than 40,000 employment sites helping job-seekers and recruiters worldwide (Fazel-Zarandi and Fox, 2010). While companies send open job positions on these portals, job-seekers use them to publish their profiles, this caused a vast amount of job descriptions and candidates" profiles are becoming available online. However, the adoption of these e-recruiting platforms accomplishing cost savings, effectiveness, and suitability for both recruiters and job-seekers (Lee, 2007). Many online recruiting platforms suffer from an inappropriateness of Boolean search methods for matching applicants with job requirements.

Consequently, a large number of candidates missed the opportunity of recruiting (Lang et al., 2011). Actual practices and theoretical thoughts show that this search type is insufficient for achieving a good fit between candidate aptitudes and job requirements (Farber et al., 2003). Researchers have identified different reasons why organizations implement e-recruiting platforms; they discussed several challenges that faced the organizations when implementing IT support for their recruiting activities. Lang et al. (2011) presented detailed information about drivers, challenges and consequences of e-recruiting platforms.

A proactive job recommender system

The proactive recommender system is an adaptive system that attempted to integrate the idea of recommender systems (Schafer et al., 1999) and adaptive hypermedia (Brusilovsky, 2001). This system contains five components: web spider, ontology checker, profile analyzer, preference analyzer, and user interface generator. Web spider is a parser that periodically acquires job information from an exterior source. The ontology checker matches information with ontologies and performs the classification. Then, the job data is stored in a pre-designated form. The profile analyzer makes the recommendations, whenever the users modify the group of favorites by comparing the weight differences with current open jobs. Then, a list of recommended jobs is generated. Finally, the preference analyzer deduces the explicitly defined user's preferences and gives a recommendation for preferred jobs after calculating the similarity of jobs to user's preference (Lee and Brusilovsky, 2007).

Categories of E-recruitment platforms

In order to give the reader a better understanding of the e-recruiting platforms, we present the six categories of E-recruiting sources that presented by (Lee, 2007): (1) General-purpose job boards that provide complete online recruiting functions. While job-seekers search jobs by category such as experience, location, education or any combination of these attributes, recruiters search applicants databases by skills, experience, preference, education, salary or any combination of key words; (2) Niche job boards (for example, Dice.com, Erexchange.com) serve the specialized markets such as a particular occupation, industry, education or any combination of specialties; (3) E-recruiting application service providers (for example, Recruit's, People Click) present a collection of services such as recruitment software, recruitment process management, education and training; (4) Hybrid recruiting service providers (for example, magazines and Journals) are the traditional means that provide E-recruiting services; (5) E-recruiting consortium (for example; DirectEmployers.com; NACElink.com) is a search engine drives traffic directly to a member's career website; (6) Corporate career website is an employment source most commonly used by Fortune 500 companies where the use of the corporate career website is a regular extension of e-business applications.

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