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Conceptualization, Implementation and Experimentation of Bi-directional Job Matching through Deep Learning

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Abstract

The Internet hosts huge online data about job descriptions and preferences which has been entered by job seekers, job holders and employers that can be utilized to train a model that matches job seekers to vacancies.

Job matching has been a challenging task in the recruitment industry due to difficulties in processing and understanding job seekers, vacancies, or matching process. The problems are associated with i) lack of information due to job seeker inability or resistance to provide sufficient data about themselves, ii) difficulty in modeling job seekers and/or vacancies and iii) the complexity of matching process itself.

This research develops a new approach for job seekers to vacancies matching through modeling the former using data from self-assessment, cv parsing and social network, and the latter using vacancy parsing and enriching via occupational standards (specifications of the job titles, their descriptions together with associated skills requisite for the job title). That is, to develop methods that facilitate data collection, knowledge discovery and presentation vis-a-vis job seeker and vacancy data collection and recommendation through the applications of deep neural learning techniques on natural language text to allow us to systematically analyze the data and find out implicit relationships among the instances in large data set.

This research shows with promising results how artificial intelligence can be used to match job seekers to vacancies using features extracted from textual data with added value to different users – employers, job seekers, and recruitment agents – to improve matching job seekers to vacancies and vice versa.

Keywords: *job matching, occupation, deep learning, bidirectional matching, recruitment*

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