Chapter 9
Learning Path Recommendation Method Based on Knowledge Map

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ABSTRACT

With the development of society, many industries and professions are more comprehensive and intersecting. Different industries have their own requirements for students with comprehensive backgrounds. For graduates, they may not know the skills required for various occupations, or what kind of jobs and occupations they can take based on their existing knowledge and skills, even how to acquire these abilities after they know the requirements of the jobs they want. In this chapter, authors combine the existing method to predict hot jobs with the analysis of knowledge map, aiming to achieve accurate recommendation of learning path for those who want to find a job. This chapter will help job hunters gradually master skills, and ultimately achieve the goal of optimizing resource allocation and saving social resources.

DOI: 10.4018/978-1-7998-0357-7.ch009

INTRODUCTION

The employment of college graduates has always been concerned by the society. However, facing with the increasingly heavy employment pressure, more and more college graduates have to choose the jobs that enterprises need and give up the jobs they like. This leads to the fact that the jobs they are looking for have little or no relationship with their major. As a result, more and more college graduates realize that they did not choose the right major when they entered the university.

This article finds that there are three main reasons that make it difficult for graduates to find suitable jobs. Firstly, they don't know which job is best for them based on their existing knowledge and abilities. Secondly, they don't know what knowledge and abilities they need for the jobs they want. Lastly, they don't know how to acquire these knowledge and abilities. If these three problems can be effectively solved, it will help individuals to improve their competitiveness and society to solve the contradiction between supply and demand in the human resources market.

In the field of Information Science, knowledge map is a semantic tool, which can describe knowledge model effectively at the level of knowledge management. The organic and multi-dimensional structure of knowledge can be revealed by knowledge map. Therefore, this article intends to use knowledge map to reveal the knowledge in job-hunting information to help graduates find jobs more easily. The basic ideas of this article are as follows. Firstly, this article takes the existing personal knowledge as the initial nodes. And then, a knowledge map is built with keywords extracted from related papers, which contain the knowledge and skills that graduates may need. Then the job information is analyzed, and the skills required by the job are regarded as the target nodes of the knowledge map. The last step is to find the path from the initial nodes to the target nodes. In this way, this article can establish an effective knowledge management tool, which can help college students to acquire professional knowledge according to their favorite jobs.

BACKGROUND

According to the "China Employment Report 2017", 56.7% of the fresh graduates indicated that their jobs were totally different from their majors. Only 25% of graduates had jobs directly related to what they had learned, while the rest graduates' jobs were partially linked to their majors. In addition, the latest statistics in 2018 saw an increase in the proportion of graduates whose jobs were related to their majors, but still less than 50%. And relevant research showed that salary (59.1%), promotion space (53.5%), and work prospect (34.6%) were the three most important factors affecting the employment of fresh graduates, which proved that most of those people did not consider their abilities and knowledge first, but their needs when looking for jobs. It's also worth noting that one of the most important abilities companies pay attention to when recruiting is work experience. For those graduates who have no working experience, they have to find ways to meet other requirements of the company.

In view of the problems reflected in the data, this article intends to recommend learning paths to graduates by combining text mining and knowledge map, so as to help them acquire the necessary knowledge better. The main technologies used include text mining, knowledge map, random walk method, etc. And this article reviews the literature on these aspects, which provides a basis for the proposed method.