University Mobile Employment Network Information System in the Internet Age

Weihua Tang* and Yongfen Liu
Qujing Medical College, Qujing, Yunnan Province, China

*Corresponding author e-mail: tangweihua@qjyz.edu.cn

Abstract. The rapid development of mobile Internet has changed our consumption patterns and living habits, and mobile Internet has become a mainstream way of life for us. This article mainly studies the construction of college mobile employment network information system in the Internet era. In terms of software environment, because this system is developed based on architecture, it can adapt to most operating systems. After confirming the choice of B/S architecture, according to the system's individualization and specific needs, this system will be developed using Portal technology. Specific functional modules are implemented through Portlet components, and the server uses JSP scripts to meet general work requirements. In the school computer room, 120 computers are used for access testing at the same time, and different roles are used for testing at the same time. At the same time, a large number of user login, system operations and query form operations are submitted. The system responds to each user's request within 5 seconds. Experimental data shows that when n is 40, the recommended accuracy reaches the maximum. The results show that the system designed in this paper has fast response speed and high accuracy.

Keywords: Internet Age, College Mobile Employment, Network Information System, System Testing

1. Introduction
The development of mobile Internet is irresistible. If the traditional media can not combine with the mobile Internet organically, it is bound to face a more difficult situation. The integration of traditional media into mobile Internet is not a new topic, but how to achieve organic integration with mobile Internet is a new test. With the development of Internet technology, online recruitment has gradually become the main channel for employers and college graduates in China. While online recruitment brings convenience to college students' employment, the phenomenon of false information and lack of credit in online recruitment also has a negative impact on college students' employment concept.

With the continuous development of computer technology and network resources, the Internet is widely used in various fields of social life [1]. And recruitment through the Internet has become a very popular way [2]. Now it provides more and more convenient employment information for college students. For colleges and universities, the management of student information is particularly important [3]. It can help colleges and universities to manage students' data in a unified, centralized
and efficient way, and can quickly extract useful information from the data, and conduct modeling for the purpose of teaching and employment, so as to maximize the education level and increase the employment rate of graduates [4-5]. As a whole, data mining is composed of descriptive function and predictive function, which is used to analyze the correlation of database parameters, and construct the model of correlation according to the correlation [6-7]. Therefore, accurate and active monitoring of customers' perception of mobile Internet services, timely and active identification of abnormal customer satisfaction [8], and on this basis, analysis, detection of abnormal causes and optimization processing have gradually become one of the important applications to ensure stable development of operators in the mobile Internet era [9-10].

In recent years, although the authorities in charge of graduate employment guidance have also started the research on the construction of graduates' employment management platform, using computers and networks as media, the efficiency of work has been greatly improved. However, the system designed by the competent department of graduate employment has great limitations and poor compatibility when applied to each specific university, it can not fully meet the school's own characteristics and work requirements. With the development of mobile Internet, the traditional information management method can not meet the current needs.

2. Construction of College Mobile Employment Network Information System

2.1. Internet Era

At present, with the rapid growth of mobile data traffic, the network load is constantly increasing. However, the development of business and traffic between different network systems in hot areas is not balanced, which leads to the low utilization of network resources. With the evolution of multi standard, multi band and multi protocol network, the network structure is becoming more and more complex, and the efficiency of network collaboration is not good. Individual's decision-making on information sharing is affected by many factors. By means of evolutionary game analysis, we can understand individual decision-making process and behavior differentiation caused by decision-making results from a micro perspective, and the user individuals that constitute both sides of the game are mutually beneficial and win-win.

2.2. Employment Network Information System

At the beginning of the system design, the use of various computer basic personnel is fully considered. The operation tips are rich, the whole process of visual operation interface, with detailed user guidance technical documents, all kinds of users can start to work well in a short time. Employment guidance center as a school to guide students' employment department, which makes the employment management work more difficult. At present, many employment guidance centers in colleges and universities are responsible for the daily management of the school, and at the same time, they should know the employment direction of graduates and the recruitment information of employers. The information gain obtained by dividing the sample set D according to attribute A is as follows:

$$Gain(D, a) = Ent(D) - \sum_{v=a}^{V} \frac{|D_v|}{|D|} Ent(D_v)$$

The cosine similarity calculation formula is as follows:

$$\cos(\theta) = \frac{A \cdot B}{\|A\| \|B\|} = \frac{\sum_{i=1}^{n} A_i \times B_i}{\sqrt{\sum_{i=1}^{n} (A_i)^2} \times \sqrt{\sum_{i=1}^{n} (B_i)^2}}$$

The formula for calculating Euclidean distance is as follows:
\[ d(x, y) = \sqrt{(x_1 - y_1)^2 + (x_2 - y_2)^2 + \ldots + (x_n - y_n)^2} = \sqrt{\sum_{i=1}^{n} (x_i - y_i)^2} \]  \hspace{5em} (3)

As school administrators, students’ full and high-quality employment reflects the quality of talent training in schools. Therefore, both school administrators and students will support the development of the system. Therefore, social development is feasible. As an employment platform between enterprises and graduates, the graduate employment information management system makes a more objective and comprehensive evaluation on the comprehensive quality of graduates, such as cooperation ability, innovation ability, practical ability, and even the emotional factors of students, so as to provide enterprises with more comprehensive and scientific graduate evaluation information.

3. Employment Network Information System Test

3.1. Test Environment
In terms of software environment, because this system is developed based on architecture, it can adapt to most operating systems. The system test environment is shown in Table 1.

| Table 1. System test environment |
|---------------------------------|
| Java virtual machine | SUN J2SDK 6.0 |
| Application server | Tomcat 6.0 |
| Database server | Microsoft SQL Server2000 |

3.2. System Test
After the selection of B/S architecture, according to the personalized and specific requirements of the system, the system will be developed by portal technology, the specific function modules will be realized by the portlet components, and the server will use JSP script to meet the general work requirements. In the computer room of the school, 120 computers are used for access test at the same time, and different roles are used for testing at the same time. At the same time, a large number of user login, system operation and query form operation are submitted. The system responds to each user's request within 5 seconds.

4. Discussion

4.1. System Performance Analysis
In this paper, the necessity of online employment information services, employment choice bias and the importance of traditional and online employment are explained. The statistical results are shown in Table 2. According to the statistical results, 85.71% of higher vocational college students think it is necessary to vigorously develop online employment information services, and 35.71% of them prefer online employment. 73.21% of them think that both of them are equally important, 14.29% think that tradition is important, and 12.50% think network is important; Among the undergraduate students, 91.96% thought it necessary to vigorously carry out the network employment information service, 62.36% preferred the network employment, 77.67% thought the two were equally important, 8.93% thought the tradition was important, 13.40% thought the network was important; Among the master and above students, 95.24% of the respondents prefer online employment, 34.92% of them think both of them are important, 15.87% think that tradition is important, 49.21% think network is important. After entering the user management module, the administrator can select the color free from the drop-down box. If the school leader is selected, the hidden department selection drop-down box

---

3
will be displayed. After selecting the specific name of the department, the user list of the department will be displayed. Similarly, the user list will be displayed after selecting the teacher of the employment department. Select the instructor teacher role, the department selection drop-down box will continue to be displayed, and after selection, the list of counselors in the department will be displayed.

Table 2. Data statistics results

| Employment choice bias | Vocational/College | Undergraduate | Master degree and above | Total |
|------------------------|-------------------|---------------|-------------------------|-------|
| Traditional            | 64.29%            | 37.50%        | 44.44%                  | 46.32%|
| Internet               | 35.71%            | 62.36%        | 55.56%                  | 53.68%|

4.2. Test Results

In the multi-attribute dynamic matching algorithm, the number of students in the cluster n is an important factor affecting the recommendation results, and the change of design n affects the accuracy of the recommendation results. The comparison of accuracy impact is shown in Figure 1. As can be seen from the figure, when n value is 40, the recommended accuracy rate reaches the maximum value, and the comparison of the three algorithms shows that the combination of the improved content-based collaborative filtering algorithm and dynamic bilateral matching algorithm in this paper is higher than the other two algorithms in accuracy. Through the analysis of the results of function test and performance test of the system, the following conclusions are drawn: the system can meet the needs of university employment information management in function, and at the same time make correct response to the user's correct request and give error prompt to the user's wrong request; the system performs well in performance and can make quick response to all requests, there was no bottleneck. The process of system design is from input design to output design, and the implementation process of system design is from output design to input design. They are just the opposite. Because the content of the output form is directly related to the users, the starting point of the design is to ensure that the output form can provide services for users conveniently and gather the effective information of various departments accurately and timely.

Figure 1. Comparison of accuracy impact

For the school, the employment rate is not only related to the life and death of the major, but also affects the image and enrollment of the school. The employment rate is an important indicator to measure the teaching quality of the school. Therefore, the employment management system has also implemented the employment rate statistics module. School leaders can query the employment rate and comprehensive analysis of different majors and departments in each year. The student management module can correctly realize the function of inputting and modifying students'
employment information. Role based module control ensures the security of the system. At the same time, the system can directly generate the employment information of students in different industries, different enterprises and the salary situation of students' employment, and provide effective data support for the decision-making of the high-level school. The page response time is shown in Figure 2. Through the test results, we can know that the actual performance of the system has reached the relevant design requirements. When multiple users visit at the same time, the response time of the system remains within the standard of 200ms, which meets the design requirements. College students can have face-to-face communication with employers on site, understand the basic situation of employers, conduct on-site consultation and deepen cognition, so as to make choices. The most popular choice for college students is campus job fairs. In traditional campus job fairs, employers can only recruit after the examination and approval of schools. Some enterprises and institutions are long-term cooperation units with the university, this can reduce the probability of false recruitment information, face-to-face two-way communication can also increase the employer's understanding of college students. The review of College Students' information can improve college students' sense of honesty and improve the success rate of employment.

![Figure 2. Page response time](image)

5. Conclusions
Under the premise of more and more fine division of labor in society, the relationship between society and colleges and universities is becoming more and more close. The relationship between colleges and universities, students and enterprises has become complicated.

Due to the expansion of the current Internet environment, the huge behavior data generated by Internet users can predict the index data in reality, which reflects the great application significance of such data. The interface is friendly and concise. Users can use the system and realize various functions as long as they know the basic operation of browsing web pages.

With the further promotion of employment system, employment market and employment management of higher vocational college graduates, and the progress of network technology, the system will produce a huge market and use space.

References
[1] Konstantinov F V, Namyatova A A. Taxonomic Revisions and Specimen Databases in the Internet Age: Dealing with a Species Rich Insect Taxon [J]. Entomological Review, 2019, 99(3):340-361.
[2] Kui Y. Governance Change and Political Identity in the Internet Age [J]. Social ences in China, 2019, 40(4):129-147.
[3] Rajaram S, Marsh E J. Cognition in the Internet Age: What are the Important Questions? [J]. Journal of Applied Research in Memory and Cognition, 2019, 8(1):46-49.
[4] Xu D. Research on New English Mobile Teaching Mode under the Impact of Mobile Internet
Age [J]. Open Journal of Social Sciences, 2019, 07(5):109-117.

[5] Papagiannidis, Savvas, See-To, et al. Identifying industrial clusters with a novel big-data methodology: Are SIC codes (not) fit for purpose in the Internet age? [J]. Computers &, 2018, 98(10):355-366.

[6] Lopes H E G, Bruno Henrique Wattê, Gosling M. BUSINESS MODEL CHANGE OF PRINTED NEWSPAPERS IN THE INTERNET AGE: THE NEW YORK TIMES CASE [J]. Revista Economia & Gesto, 2020, 20(55):102-119.

[7] Wu Y J, Chen S C, Pan C I. Entrepreneurship in the Internet Age: Internet, Entrepreneurs, and Capital Resources [J]. International Journal on Semantic Web and Information Systems, 2019, 15(4):21-30.

[8] Singh H, Miah S J. Design of a mobile-based learning management system for incorporating employment demands [J]. Education and Information Technologies, 2019, 24(2):995-1014.

[9] Xingang, Zhou, Anthony, et al. A commuting spectrum analysis of the jobs-housing balance and self-containment of employment with mobile phone location big data [J]. Environment and Planning, B. Urban Analytics and City Science, 2018, 45(3):434-451.

[10] Shan D, Lippel K. Occupational Health and Safety Challenges From Employment-Related Geographical Mobility Among Canadian Seafarers on the Great Lakes and St. Lawrence Seaway [J]. NEW SOLUTIONS: A Journal of Environmental and Occupational Health Policy, 2019, 29(3):371-396.