Application of College Education Management using Big Data Technology

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Abstract

The employment information management system of colleges and universities in the big data environment is built in order to efficiently manage the employment information of colleges and universities and improve the employment ratio of college graduates. Graduates may amend their personal information, comprehend employment-related information, and review recruiting data using the system's graduate management interface. To identify graduates who satisfy the employment criteria, businesses utilise the enterprise information management platform to create their own materials and distribute recruiting information. The platform for personalised recommendations employs the recommendation method based on historical user data to achieve offline employment recommendation and the recommendation method based on current user behaviour data to achieve online real-time employment recommendation and enhance the employment ratio. The platform for tracking and managing employment information is in charge of keeping track of graduates' job data and confirming the validity of recruiting data. When the number of concurrent users varies, the testing findings demonstrate that the system has a quick reaction time and a low resource occupancy rate. College graduates' likelihood of finding job has successfully increased.

Key: Application, College, Education, Management, Big Data, Technology, real-time, employment, recommendation.

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Introduction

The platform for personalised recommendations employs the recommendation method based on historical user data to achieve offline employment recommendation and the recommendation method based on current user behaviour data to achieve online real-time employment recommendation and enhance the employment ratio. The platform for tracking and managing employment information is in charge of keeping track of graduates' job data and confirming the validity of recruiting data. When the number of concurrent users varies, the testing findings demonstrate that the system has a quick reaction time and a low resource occupancy rate. College graduates' likelihood of finding job has successfully increased.

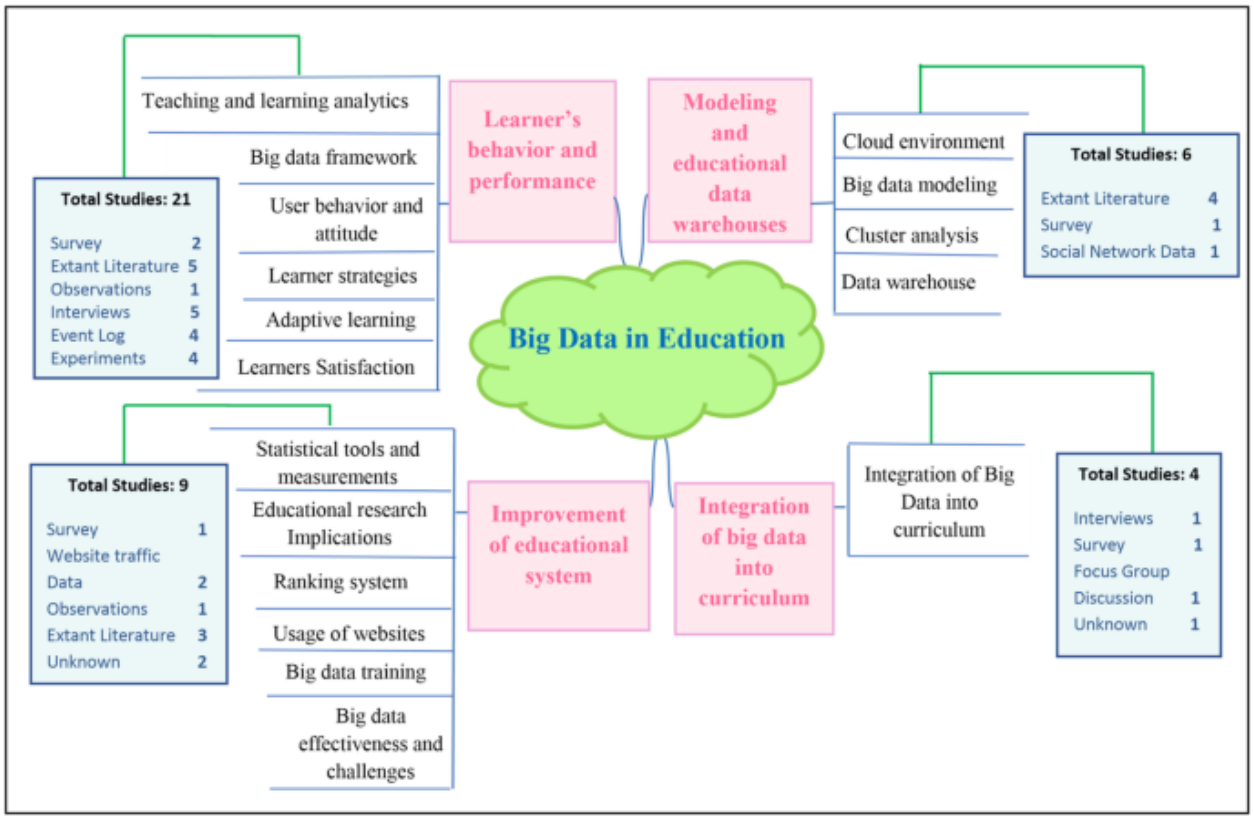

Fig.1: Application of College Education Management using Big Data Technology Flow

When choosing a job, people often consider factors including proximity, accessibility to transit, pay scales, intensity, and working hours. The current employment recommendation or online job search systems, however, lack intelligence and can only offer users recommended information based on simple classification technology and cannot fully take into account the employment

information that users are concerned about, resulting in inaccurate information matching, which has an impact on the success rate of online job hunting and wastes resources [3].

Functional Requirements

Generally speaking, the system's design ought to take its external environment into account. The system is primarily for the convenience of graduates to receive information, employers to release information, and schools as a third party to facilitate management while at the same time for the use of the three parties to provide good technical support, according to the current external users of the system (schools, employers, and graduates) and the purpose of system development [11]. At the same time, keeping in mind potential requirements for future development and upgrading, as well as the practicality of managing system operation and maintenance and the functionality's completeness, the system should have scalability, based on the creation of typical users to describe user needs for different goals.

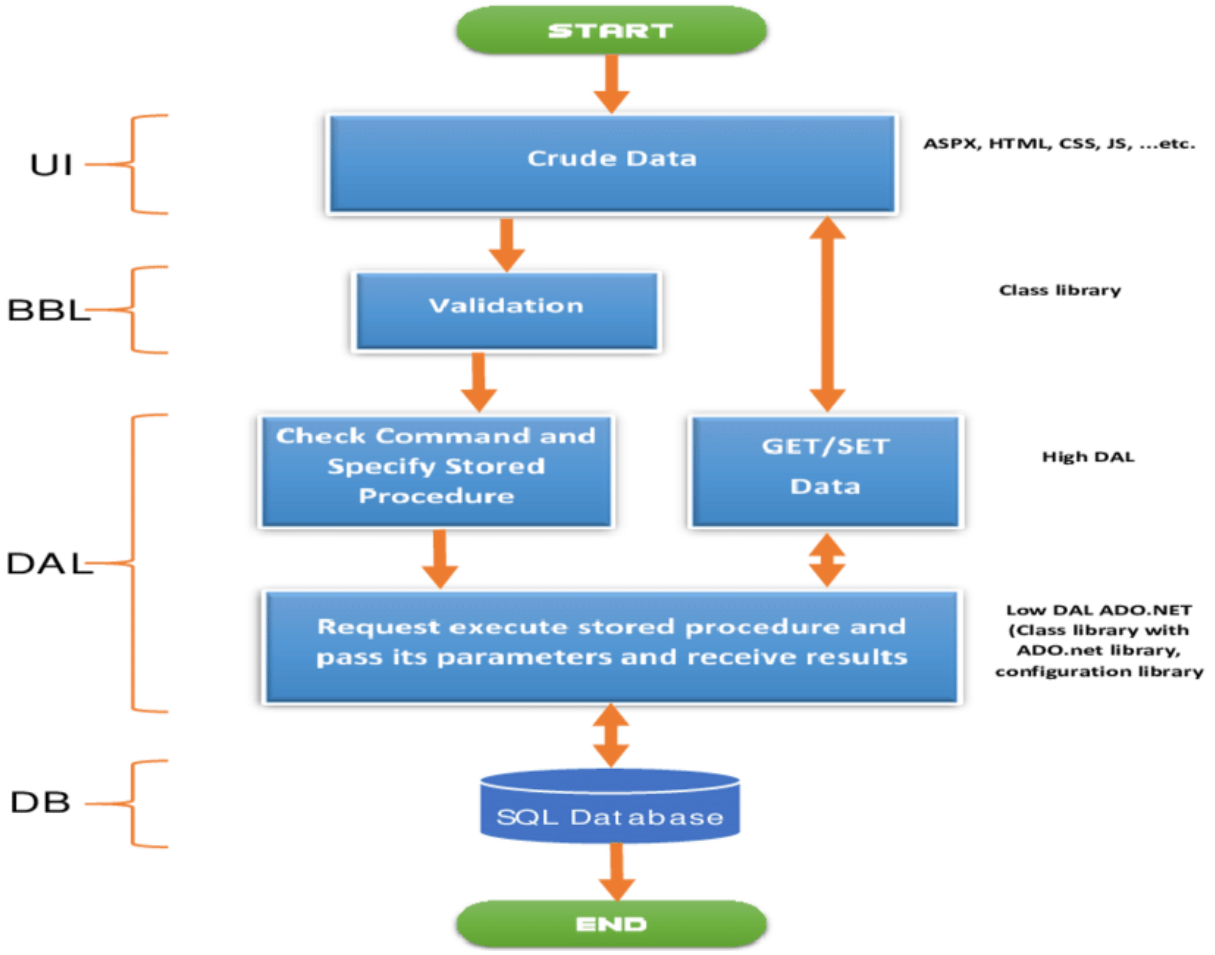

Fig.2: Application of College Education Management using Big Data Technology

Management System Based on Big Data Platform

Data integration and data transformation are the fundamental components of data preparation. It is required to initially merge the two databases since a graduate's fundamental information and employment information originate from separate sources. The graduate information management platform, enterprise information management platform, personalised recommendation platform, and employment information tracking management platform are the four subsystems that make up the university employment information management system based on the big data platform. A classifier is created using a different process than a generator does, using data from a dataset.

After the generator is created, it classifies the data with unclear label attributes and analyzes the clear label attributes through the classifier to provide a basis for relevant predictions.

Real-Time User Behavior Data

Understanding user behaviour preferences in light of pertinent data is the basis for the recommendation approach based on user behaviour data. Similar users are grouped together based on various behavioural preferences, and individuals are then suggested for employment that fit their choices.

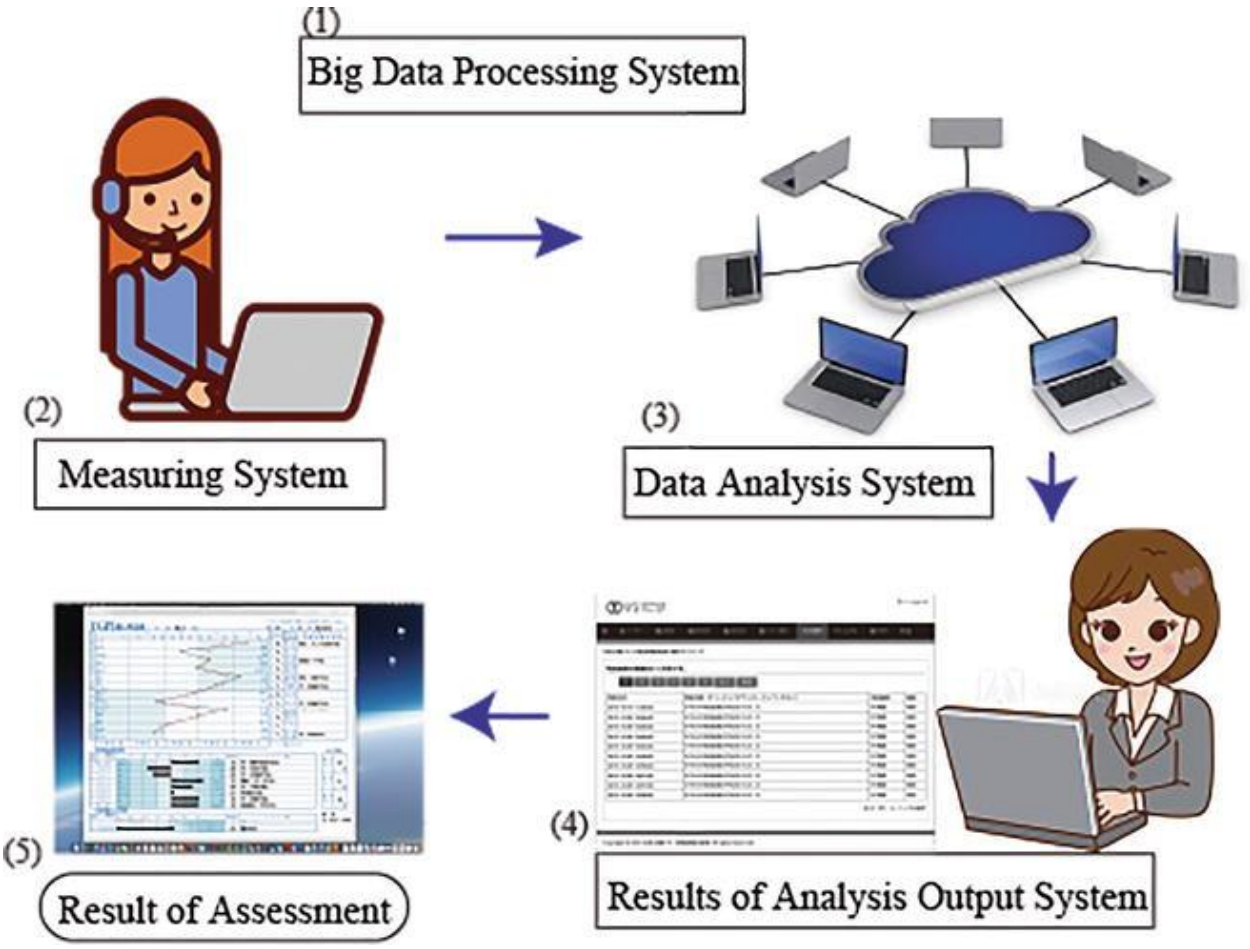

Fig.3: Application of College Education Management using Big Data Technology Process

To accomplish online real-time user recommendation, data modelling is performed using real-time data parallel processing capabilities, user-based collaborative filtering, and item-based collaborative filtering algorithms [2][1]. According to user-based collaborative filtering, results are achieved based on the standing of the firms that these graduates pay attention to and the companies they provide to, if the remaining graduates with the same preferences as graduate A can be found.

Analysis of the Experiment

Using a university as the experimental object, the system was used to implement employment information management for the university from January to March 2019. The system's performance in terms of query management, response time, resource occupancy rate, and employment recommendation was tested during this time.

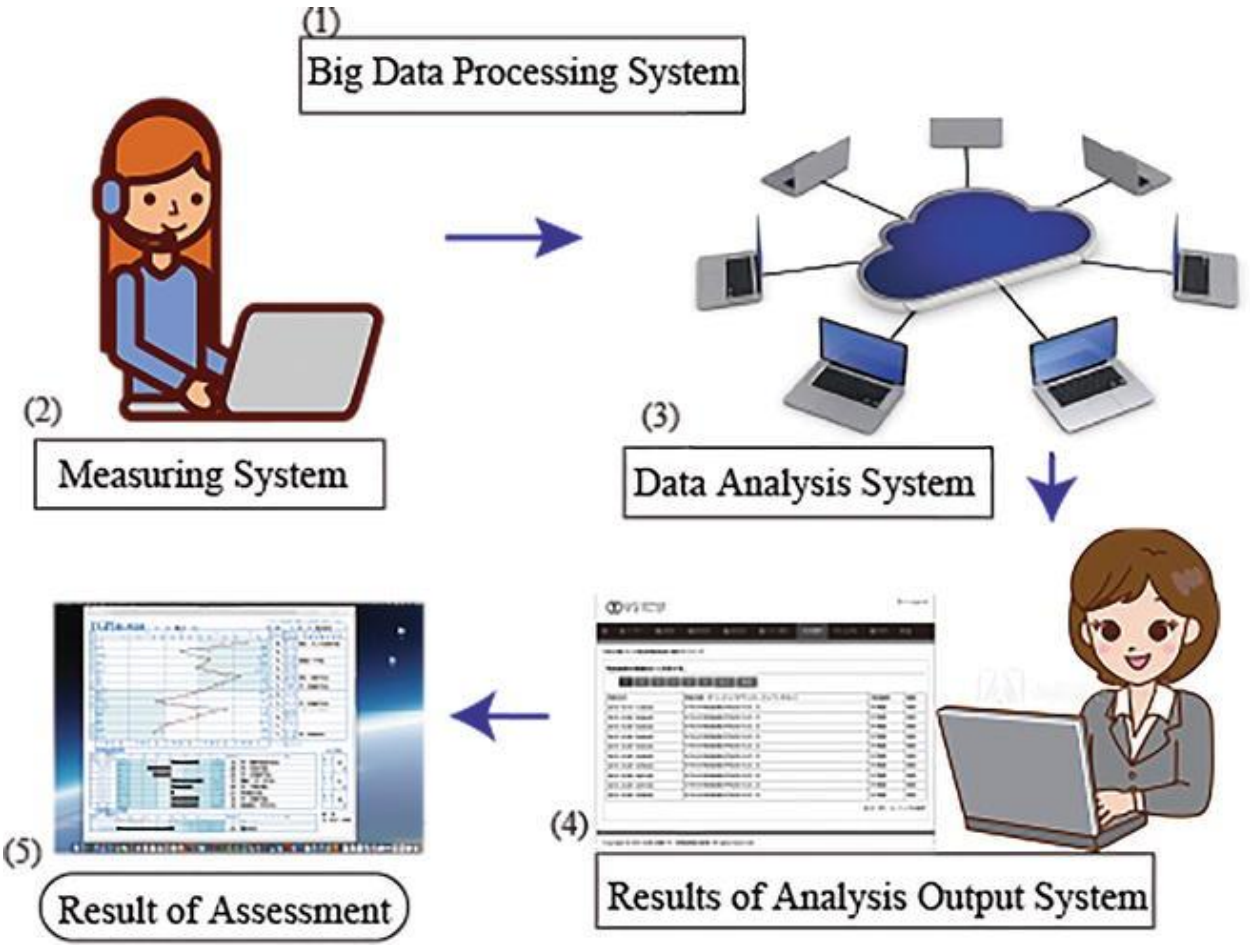

Fig.4: Application of College Education Management using Big Data Technology Method.

Using the administration of university employment information as an example, graduates can conduct job-seeking operations using the job-seeking management module after successfully signing in to the system in the text [6–8]. Graduates can see the system's recruiting data and outcomes.

Algorithm Based on Graduate Employment Management

Although the technique has been chosen, the amount of datasets in the graduate employment database, the level of dimensionality reduction used during calculation, and specific values used during calculation will all have an effect on the test results. The following aspects of this experiment are used. For the sake of statistics' ease, a single variable is changed during the experiment. The impact of one environment on the entire system is examined with altering just one variable while leaving the other variables unaffected.

Result/Conclusion

The administration of job information at universities plays a significant role in the educational mission of colleges and universities. In order to improve the service for the employment monitoring of college graduates, increase the employment rate of college graduates, and gain access to useful real-time information, a university employment information management system built on the big data platform is created. Information on the supply and demand for university graduates as well as data support for changing the university teaching management model are very important. This research aims to develop and design a set of employment management information systems to fully meet the needs of graduate employment management and ensure the system's scientificity, efficiency, stability, and applicability starting from the actual needs of the employment management of college graduates at this stage. To guarantee the quality and availability of the system, we fully use today's cutting-edge computer technology in the design and development of the system. In order to introduce the database construction connection, the conventional decision number technique is also replaced with the convolutional neural network. It guarantees the correctness and completeness of the database information for this system and is capable of conducting a more thorough and reliable evaluation of the factors impacting employment.

The system has completely realised the improvement of the employment level, the seamless employment of the students, and the enhancement of the current training mechanism.
The system also incorporates the association rule algorithm into data-mining analysis, which results in the following outcomes:(1) Provide a clearer and more accurate summary of the data (2) Increase the application of research analysis results (3) Produce fewer rules (4) Mine association rules across hierarchies.

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