

Utilising Big Data in Computer Science and Language Formation

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ABSTRACT

This work addresses the history of big data from the standpoint of professional experimental courses in information and computer science. It also enhances these courses and elaborates on the particular uses of big data within the information and computer science professional experimental course system. Among these, big data's display of artificial intelligence technology in experimental instruction aids students in conducting professional experiments more effectively. In the meantime, data analysis can provide experimental information with quick results that accurately reflect its high speed and speed. This paper aims to research the role of new technologies developed due to integrating big data technology with the information and computer science major—specifically, data analysis in the significant—and the data analysis technology used in the experimental course.

INTRODUCTION

Big data, a new science and technology of the modern world, uses vast information, data analysis, and planning to enable every technology to achieve its high-value products and services. China is actively conducting educational experiments due to the influence of big data.[1] A few examples of initiatives to actively investigate novel teaching techniques in the field of education are MOOCs, innovative online courses, multimedia classrooms, and others. Naturally, big data is necessary for these technologies' full development and advancement; without it, these technological circumstances would not exist. By analysing vast amounts of data, big data can offer more extensive educational materials, as well as secondary feedback for them and relevant data harvest from pupils. Nowadays, there is a greater emphasis on "big data" in society, but numerous sectors are also changing course to significantly advance advancements in all spheres of life.[2]

INFORMATION AND COMPUTATIONAL SCIENCE MAJORS INFLUENCED BY BIG DATA

Computational mathematics serves as the cornerstone of information and computing science majors to advance societal and scientific development. Big data is the term used to describe the enormous volume of data that makes it impossible for us to manually finish the analysis, computation, and administration of content material. Big data has allowed technology to go on a new path that is not altering our way of life or our capacity for thought but serves as a catalyst for new products and services. The need for people with extensive data management and analytical skills will only grow in the future social growth. Prominent data system administrator, big data platform development engineer, data analyst, and other roles are in high demand Information and computer science talent training is growing slowly, but it still needs to meet the demands of businesses and society for qualified personnel. Second, there is less information and computer science reform in Chinese colleges and institutions.[3] In the age of big data, a few renowned universities, like Beijing University of Aviation University and Chongqing University of Posts and Telecommunications, have launched an experimental teaching reform for computer majors. The need for more accurate and quick experts in the significant data era aligns with the objectives of the information and computer science degrees. The goal is to establish a vast pool of skilled professionals for the big data development industry in the future while also balancing the needs of society and the actual demands of the market.[5] However, in the information and computing science field, we should actively incorporate the ideological and technological advancements of the significant data era while preserving the benefits that mathematics science offers professionals. We should also develop students' practical operation, comprehensive application, and independent operation skills.

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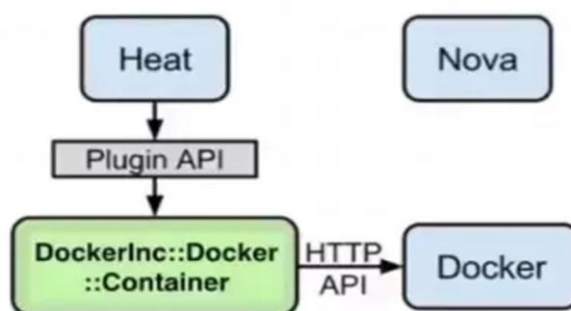


Figure 1. Schematic diagram of the application of big data technology

With computer mathematics as a supplement, the employment direction of information and computing science is primarily information science with a focus on mathematics. Students majoring in information and computer science mainly study fundamental theories, concepts, and techniques. They also establish a solid mathematical foundation, receive reasonably good computer instruction, and are initially qualified to conduct scientific research, solve real-world problems, and design and develop software related to these fields. Professional training in information and computing science that includes solid mathematical skills, mastery of the fundamental ideas and techniques in these fields, and first training in scientific research can do research, teaching, application development, and management work in the departments of science, technology, education, and economy of senior professionals. They can also use their knowledge and computer abilities to solve real problems.

The following categories approximately correspond to the employment orientation of information and computing science: After completing additional coursework and mastering the techniques and skills of information and computer science, graduates in these fields can work as instructors and researchers in universities and research facilities, carry out more teaching and research in information science and computer mathematics, or use their superior computational and mathematical modelling skills to solve real-world application problems.

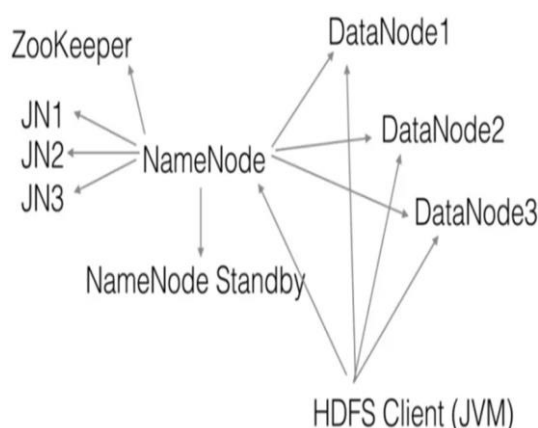


Figure 2. Big data memory mesh images

IT enterprise: Information and computing science graduates entering IT enterprises is an important employment direction.[6] In terms of majors: information and computing science is a new science major under the mathematics discipline.[7] On the one hand, it provides a new platform for China to train information and computing science talents, in line with the development of today's era. But on the other hand, the major has been opened for a short time, and graduates face a short-term imbalance between supply and demand, and there is no clear employment industry. From the development of the whole IT industry: the current annual growth rate of China's IT industry has declined.

Numerous IT businesses are continually improving employee quality standards and adjusting to the changes in the industry and industrial reform.[8] Amidst the severe financial crisis, employment shifted from being a seller's market to a buyer's market. Employers typically lower the beginning salary and raise the criterion in response to the

oversupply of college students. Certain employers emphasise prior English language proficiency, while others arbitrarily prolong the probationary period for recent graduates. One of the most significant issues facing college students today is the dramatic decline in starting pay in the IT industry.[9]

INFORMATION AND COMPUTATIONAL SCIENCE MAJOR FACES CURRENT PROBLEMS

A. The corresponding training protocol is lacking

Information and computing science is a new major issued in 1998 in China, and it is a compound major formed by the cross- penetration of information science, computer mathematics and transportation research. [10] Because of the short establishment time of this major, there are still many shortcomings in the information and computing science major of major universities in the teaching content. First of all, the teaching content was not clear about the curriculum system and structure of information and computing science, and did not form the professional characteristics of the school. For example, a total of 22 universities in Liaoning have majored in information and computing science, but due to the lack of a unified teaching system, major universities are facing many curriculum problems.[11] Second, colleges and universities are not clear about the teaching setting, nor do not know what the key points and training objectives are.[12]

There are considerable problems about whether these courses meet the needs of social development and the goals of training professionals. Secondly, many schools only pay attention to teaching theory and ignore practical operation, and the operation of teaching methods and content compared with backward.[12] The purpose of practical teaching is to verify the course theory, the teaching mode is single, and the content is boring.[13] So in the professional setting and talent training at the same time should be combined with the pace of computing science and social development to improve the curriculum teaching system, improve the students' learning enthusiasm, improve the employment quality of fresh graduates, at the same time the development of the major produces good benefits, and constantly for the national information technology industry to cultivate more excellent professionals. At the same time, there is a lack of double-teacher teachers, and the overall connection between information and computing science and society is not close enough. At the same time, teachers lack certain experience in teaching practice, knowledge structure has not formed a complete knowledge system, and lack of professional setting, both in practice and theory.[14]

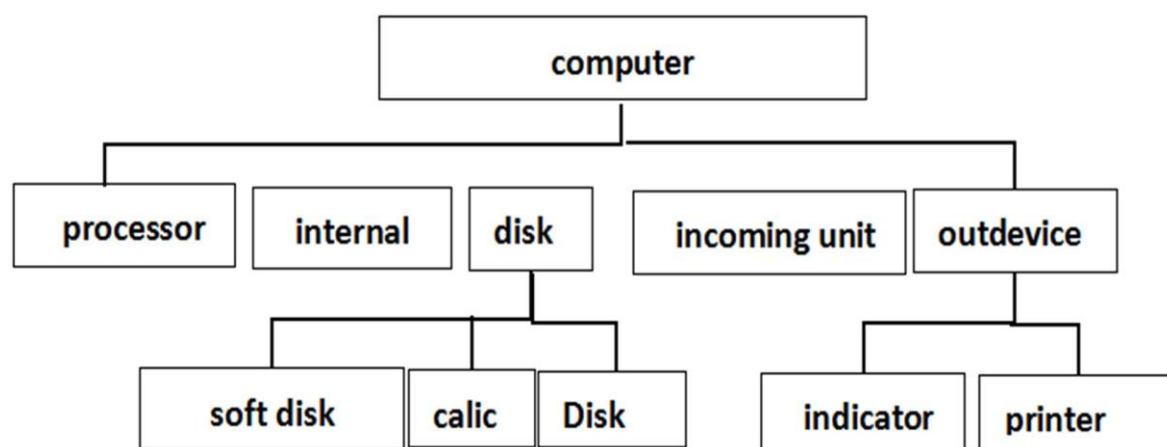


Figure 3. Information and Computational Science flow chart

B. Solution ideas

In view of these problems, colleges and universities should reflect on how to effectively integrate information with computing science major into the development of society, and what kind of talents to cultivate.[15] Big data emphasizes on the development of commercial value, and we need to master data warehouse, data security, data analysis and other skills. However, the traditional experimental teaching of frontal information and computational science has less related experimental teaching. As a data analyst, not addition to master more knowledge and mathematical analysis ability, but also to strengthen the cultivation of ability in various aspects to promote its all-round development.

Colleges and universities strengthen the basic experimental link of theory, because the theoretical basic laboratory and professional basic courses. It mainly includes programming design, mathematical models, mathematical experiments. The experimental link of the theoretical foundation is the key to improve the quality of the experimental curriculum. Therefore, it is necessary to open closely around the professional basic courses, deepen the grasp of the

theory through the experiment, so as to meet the requirements of "proficiency", improve the students' hands-on operation ability and the ability to deal with problems. The experimental link of big data analysis is according to the direction of data analysis, and tries to solve the industry positioning of information and computing science. Including database technology, massive data mining, data modeling and other courses, is the computer application experimental link. At the same time, colleges and universities should also reform the real assessment methods, and adopt different assessment methods according to different experimental types and types. For example, the understanding of class experiments focuses on students' understanding of experimental principles and the proficiency of experimental technology. The computational application experiments can be evaluated in the form of scientific papers. The experimental links of big data analysis can require students to jointly develop experimental plans in groups. Through different assessment mechanisms, fully stimulate the students' learning enthusiasm, improve the quality of classroom teaching. In addition to usually paying attention to theory, students should also be encouraged to participate in various professional and technical competitions. Guide students to apply for college student innovation experiment project and college student scientific research training program project, and participate in all kinds of college student modeling competitions.

According to the data of students' learning behavior, teachers can record and manage students' professional ability, constantly update and analyze students' thinking habits, and create psychological scale. Different training programs are adopted for each student according to their learning priorities and the content of their learning progress. Similarly, each student's performance and feedback will be recorded and the integrated management of large-scale learning behaviour data will be classified with the help of the system. The mathematical literacy of students is the potential mathematical thinking mode of students. The mathematical training of students is not formed through the indoctrination of mathematics and knowledge, but through continuous efforts, through hard study and training to improve the way of thinking and self-cognitive ability of students. Developing students' mathematical literacy can further improve the quality of information and computational science courses.

CONCLUSION

In the big data environment, our lives and environment have changed dramatically. In this paper, the information and computer science has application oriented practice teaching mode, phase penetrating various multidisciplinary knowledge evaluation way, not only can cultivate students' independent consciousness of competition, more important is to cultivate students' interest in computer science information, strengthen the study direction, so that the students can determine the future direction of employment, information and calculation science specialized change, It is to improve the quality of information computing science and cultivate a large number of excellent talents.

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