Application of artificial intelligence technology in distance education system

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ABSTRACT

This article against the application of artificial intelligence technology in distance education system to make a thorough study, including a basic introduction to artificial intelligence, effects of artificial intelligence technology for distance education system, problems of distance education system and applications of artificial intelligence in the remote education system. We aim to be able to bring some of the views of a reference to colleagues.

KEYWORDS

Artificial intelligence technology; Remote; Education system.

INTRODUCTION

By the advent of artificial intelligence technology, it has made more outstanding achievements in various fields; this new technology can be used to simulate the human brain via computer terminals, so as to help people take more complex and tedious calculation purposes. And with a wide range of computer and network popularity, artificial intelligence technology is no longer confined to being used by research institutions; it has entered into more people's family and life. With this change, a more convenient and efficient way of education came into being, but because of this remote education system is not perfect, so that there are still some various types of problems in practice.

First, a basic introduction to artificial intelligence technology

There are many research fields of artificial intelligence technology; the more common are anthropomorphic robots, electronic terminal intelligent systems, voice recognition and intelligent dialogue and IntelliSense system of computer. Through these researches, it is not difficult to find that artificial intelligence techniques can be defined as a branch of computer science. So, what can by artificial intelligence techniques to achieve? Some popular interpretation is that it can make the computer to mimic the human brain's cognitive system and analysis and feedback for the received data. The creative process is not very complicated; it collect and aggregate through the human sensory perception and response to unexpected performance of various events, this information will be digitized, which were entered into the computer through the program. When a computer or other electronic terminals have been given artificial intelligence technology, it will make more close to human handling in the face of questions.

The concept of artificial intelligence was proposed as early as 1956, since the advent of so far, it already has made impressive achievements in various fields and industries, we look at their entire development process, and the main content of artificial intelligence technology can be divided into five areas:

Machine thinking

The machine thinking is the most important technology of whole artificial link, through which a variety of external information and work instructions from computer itself can be integrated and tasks with the above assign can be accurate processed.

Machine perception

Machine perception is naturally not the same with the human perception system, because it does not have touch and the sense of smell, it can only perceive the outside with the "eyes" and "ears." So, if you want to implement artificial intelligence system on the computer terminal, you must have the device with an audio output and input function, image.

Machine Learning

The approach of machine learning is almost similar to human learning, grasp new knowledge and understanding by reading all outside information. However, today's machine learning also rose to a new level with respect to the human brain, which can really achieve "never forget", by setting various types of instruction knowledge and information can be stored and absorbed completely learning to break the limitations of the human brain.

Machine behaviors

There are a lot of human performance, which when in contact with the outside world is the need to have the ability to read and write, graphics capabilities, and the ability to tell. The computer through AI technology can have very good performance ability of these several human behavior.

Construction techniques of intelligent systems and intelligent computer

If you want to make artificial intelligence technology combined with the computer together more harmonious, related researchers must further take the optimized for the system and intelligence computer terminal itself to ensure that artificial intelligence techniques can be effectively carried out on electronic devices applications.

THE INFLUENCE OF ARTIFICIAL INTELLIGENCE TECHNOLOGY FOR DISTANCE EDUCATION SYSTEM

Artificial intelligence is through a computer terminal to show human simulation results, through this form of expression that allows the computer to complete similar to the human thought process. This highly intelligent high-tech discipline will bring enormous changes in the field of science.

Since the artificial intelligence technology to carry out in the field of distance education, the number of the associated remote expert education has sharp rise, and also makes more and more ordinary people joined the ranks, so that students and teacher with a real zero distance contact. Today, in the whole distance education systems, including not only the daily need of teachers teaching tool, but also includes management system of part-time work of students, so that classroom management is not limited to the campus. Many people set their sights on the economic benefits of artificial intelligence technology can bring, indeed, this way can make the teaching content, learning focus, after-school tutoring and other exercises as well as classified information altogether integrated into the system. It can process such information and effectively extract feature with the purpose. Relevant actors will be able to easily classify the content of these teaching through the identification results, which were assigned to go to a variety of different fields of study.

Artificial intelligence technology has a very large energy, it can change human primitive cognitive styles and modes of thinking, through constant development of technology, and artificial intelligence is very likely to replace the previous traditional education methods, let the educational field with tremendous change.

THE DISTANCE EDUCATION SYSTEM PROBLEMS

Firstly, we take a look at the content of distance education system. For example, education site, a sound and capable of normal operation of distance education website should contain three aspects of distance learning, expert online Q & A and databases. The core meaning of distance learning is to produce the effect of a constraint for students, to ensure their effective grasp the knowledge points in the learning process; online Q & A allows students to communicate in real time with the teachers and narrow the distance between teachers and students; content of database should be very comprehensive, which can enable students to understand the full range of knowledge and inquiry, to help them carry out independent thinking and problem solving. Development of distance education system has been maturing, but in terms of the details, there are still some problems, the author picked two aspects of the more prominent to analyze.

Content of knowledge is too monotonous

The author visited a lot of distance education sites and found that their content of knowledge is generally copied into the network from the teaching textbooks. People did not feel new, but just read the electronic version of the textbook. It lost the meaning of existence distance education system fundamentally, although the issue and pictures into the information, but did not have a valid smart technology into them, unable to arouse students' desire to learn.

Way of the expert Q &A is too simple

Expert Q & A platform for today's educational websites are using nothing more than the following categories: forums, email, and various chat tool. First, through the forum for answering words are unable to allow students and teachers to take "face to face" communication, it will exist a certain time difference, often occur in cases where a student has already completed exercises after the teacher answer; email form can only communicate one to one, which increased the workload of teachers in a lot of intangibles; although the application of chat tools can improve the timeliness of answering, but there are also thinking a short time, not comprehensive analysis of the problem. So, if educational website want more proper solution of answering questions of experts, it is necessary to combine the relevant scientific and technological means to come up with a more flexible and practical Q & A platform.

APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN DISTANCE EDUCATION

Intelligent network teaching platform for distance education

Intelligent agent technology allows computers to take autonomous adaptation for new things and environmental, and take the process and integration of information and make effective completion a series of actions in the instruction. And by setting multiple intelligent agent systems in the computer will have more high-end processing capabilities, through mutual cooperation between the various subsystems will greatly reduce the time information processing. Thereby it can improve the timeliness of the entire education system.

The actions brought by the intelligent agent technology in distance education network are following points, including real-time tracking of feedback information; state analysis of the teachers and students; teaching information retrieval and intelligent recommendation from system. These smart tools allow students to conduct independent study in the educational system, and the system is also capable of learning conditions and learning outcomes for accurate analysis, the analysis report timely feedback to teachers can help train the learning initiative of students. At the same time, adding of intelligent suggestion also reduces the manual workload of teachers; do not go wrong in many ways for learners to counseling.
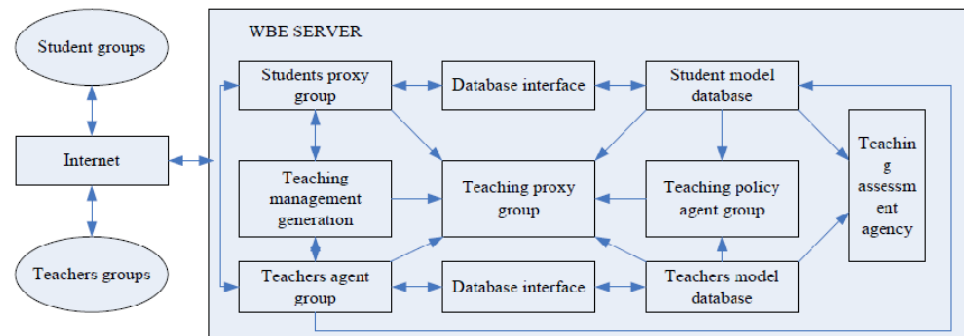

Figure1: Simulation of tutorial education intelligent network teaching platform

The Figure 1 presented the intelligent agent technology distance education platform simulation map. By the simulating graph, we can clearly understand that the popularity of intelligent agent technology can solve some of the problems fundamentally by distance education platform, and effective gradually merged education groups and student groups, to become the true sense the two learning groups of complement each other and common development.

Expert system

Through technical means to learn an expert way of thinking and problem-solving skills, and instead of experts to answer questions raised by the students. After the emergence of expert systems for remote education system, it saved funds largely of educational website, summary and analysis the knowledge and experience of experts in different fields, allowing the computer to understand the experts of thinking and teaching methods, to achieve the realization of the ultimate goal with "a machine with numbers". Since the advent of expert systems, the major educational website has established the database of various fields, have basic knowledge to ensure online access to a variety of difficult and Q & A which will effectively improve the efficiency and quality. The general structure of education transfer system is shown as Figure 2.
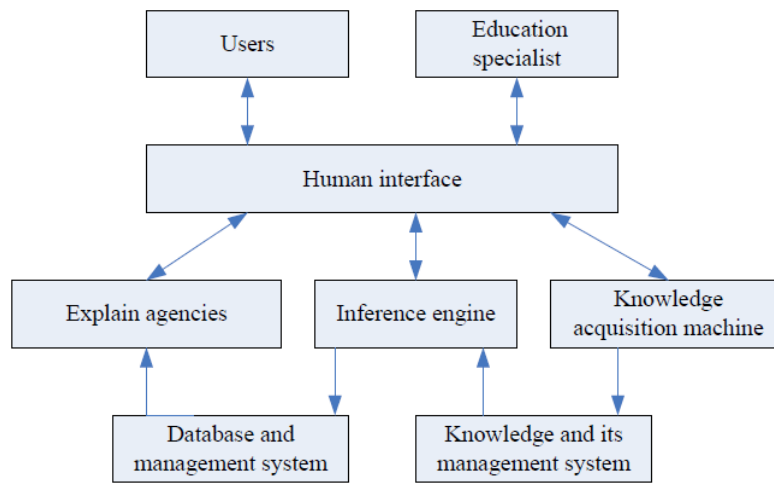
Figure 2: The general structure of education transfer system

Intelligent retrieval system of distance education teaching resources

The advantage of remote teaching methods possess is very obvious, it can without geographical and time constraints to customize learn the various fields of knowledge. And knowledge of information and knowledge category are very large. We take an ordinary distance education site as the example, the type of teaching resources contained in it should have the following several formats: video images, audio, text, RTF and HTML and so on. These teaching resources in different formats should effectively classify, and can ensure that users and learners accurately find them, and that means artificial intelligence to build a retrieval system needs.
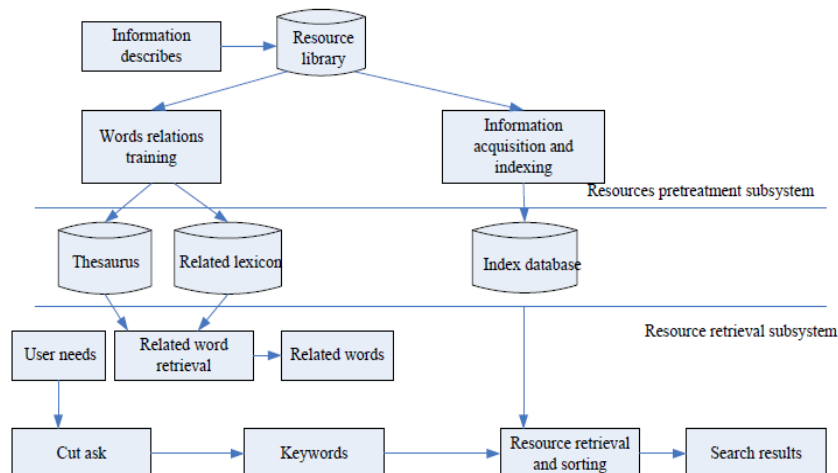
Figure3: Architecture diagram of intelligent resource retrieval based on XML and natural language processing

In today's educational system, the commonly used method of knowledge management methods is a tree structure, this way of teaching resources can indeed be classified, but it also has some limitations. Since the tree structure law is too simple and not clear enough, so that only some categories of resources and less able, use a small amount of information in the knowledge database. So this way is only a temporary solution and cannot make the education system as the main retrieval system.

Figure 3 shows structure diagram of intelligent resource retrieval based on XML and natural language processing to everyone. We can see through the structure, the entire intelligent retrieval system mainly consists of two major aspects, namely resource retrieval subsystems and resources pretreatment subsystem. Retrieval subsystem primarily through analysis of user needs to take integration of cable thesaurus, dictionary thesaurus and related thesaurus, which will completed the intelligent retrieval; while resources pretreatment subsystem is able to integrate and describe a variety of resources and information to present index results to the inquirer through intelligent indexing technique. Establishment of such intelligent retrieval systems not only has an accurate segmentation technology, but also allows users to perform fuzzy query by keyword, which can greatly improve the retrieval accuracy and timeliness.

Experiment teaching system of remote intelligent simulation

Any success is to be done through continuous experimentation, so the experimental teaching for students is important. But now, the distance education system has virtually no presence of such a simulation teaching sector, which is largely restricted to move forward from the education system and the practical performance of the user. Through distance education system to complete the simulation experiment is more difficult, due to the many limitations of time, space, and equipment, etc., that allow users and implementers cannot understand the true state of both parties. So, can intelligent simulation system effectively addressed dilemma I mentioned?

Intelligent simulation system is a product of the high-tech era, and its emergence have been completely broken the manufacturing methods of traditional model. The electronic information way instead the past modeling methods which were monotony and lack of innovative. Intelligent simulation technology mainly created a policy modeling software and language technology through calculated simulation model generation and analysis of database integration. And it can ensure the authenticity and fun of simulation. This intelligent system can completely replace the work of experts, manipulate and manage the whole experiment, and help the experimenter to effectively analyze experimental results.

The Figure 4 shows the physical structure of the robot remote control experimental system, we can see in the figure, the computer control the entire operation of the platform through remotely via the internet as well as locally. Three machines can guarantee the web site landing, exchange between users, video and normal operation of the robot and other functions.
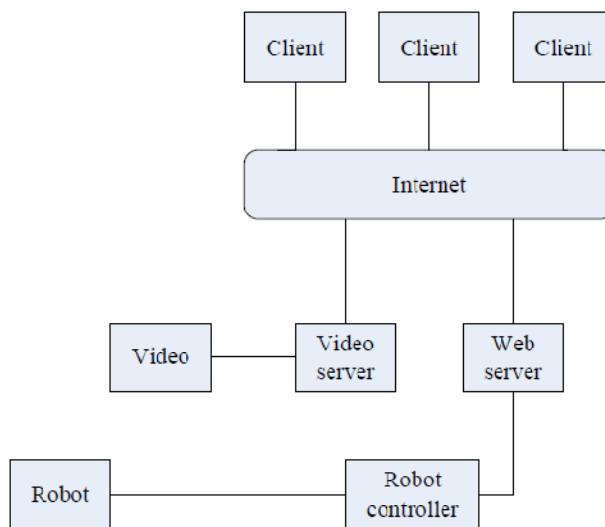

Figure 4: Physical structure of the robot remote control experiment system

CONCLUSION

Today, the popularity of distance education system has become increasingly high, and the intervention of artificial intelligence technology has also allowed a more heavy competition chips. As distance education is just emerging, when it is not getting widespread attention, which is mainly because it does not have a good learning environment, and many books contents are in accordance with the above materials copied down, and did not let the learners have more convenient and efficient learning experience. Although our technology in this field is still a middle position, but I believe in the near future, we will let distance education play a more light and heat to increase the strength for China's educational undertakings.

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