Application of Artificial Intelligence Technology in Electronic Information Engineering

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Abstract. In the development process of artificial intelligence, electronic information engineering technology is indispensable. Electronic information engineering technology support is extremely important for the development of artificial application. This paper describes the related concepts of artificial intelligence and electronic information engineering, and researches and designs the application of artificial intelligence technology in the electronic information engineering platform. Through the analysis, we can see that the system is not There are fatal loopholes, the success rate of data transmission basically meets the demand of more than 80%, and the response time is within 3S, which can also meet the set requirements.

Keywords: Artificial Intelligence, Electronic Information Engineering, Information Industry, Platform Design

1. Introduction
Artificial intelligence is also more humanized. Artificial intelligence technology is becoming more and more mature and will be gradually applied to the field of higher education. In the 21st century, cutting-edge, popular and convenient new technologies continue to emerge. Among them, artificial intelligence has infiltrated into all walks of life at an unimaginable speed. At present, the well-known speech recognition, system positioning, intelligent public transportation and so on are all the applications of artificial intelligence technology [1].

In the past two decades, information technology has significantly changed the way companies interact with suppliers and customers. It allows companies to share information quickly and cheaply, such as point of sale data, inventory, forecast information and sales trends. The most famous example of information sharing is Wal Mart's retail link program, which provides point of sale data to suppliers [2]. In addition, due to the continuous changes in competition and socio-economic environment, diversification of demand and shortening of product life cycle, the demand for products is more uncertain. For example, a mobile game is often replaced by new hot spots in one or two years, sharp, Jinli and TCL. It is increasingly important for platform and software suppliers to closely track and predict the needs of users. On the other hand, in the context of big data, especially smart Internet products such as mobile phones highly integrate mobile Internet, face recognition, mobile positioning, social media and other functions. Application software can realize close tracking and forecasting requirements based on real-time interactive data and big data technology. For example, the software can obtain user's storage, location, address book and other personal information through permissions.
In order to predict the needs of users, the development and utilization of market information is an opportunity and challenge for current enterprises [3]. Therefore, it is increasingly important for platform and software suppliers to share user information reasonably to maximize their own interests. However, the goal of each platform is to maximize its own interests. As an enterprise sharing private information means giving up the right to control and use these important information, enterprises have many concerns about sharing private demand information upstream and downstream [4].

This study studies the structure of electronic information engineering from the perspective of artificial intelligence, interprets the changes of electronic information engineering in the future from a new perspective, and provides a certain theoretical basis for the adjustment and optimization of electronic information engineering in China; analyzes the future development trend of electronic information engineering from the perspective of artificial intelligence, and provides reference for electronic information engineering from the reality of electronic information engineering This paper puts forward some reasonable suggestions from the AI level to provide some theoretical guidance for the development trend and optimization of electronic information engineering. This paper provides multi-disciplinary thinking for the coming of artificial intelligence era, analyzes the possible trend of electronic information engineering under the background of artificial intelligence, and probes into the internal logic mechanism of artificial intelligence and electronic information engineering, so as to provide feasible suggestions for the adjustment of electronic information engineering.

2. Related Concepts

2.1. Concept of Artificial Intelligence
As early as the 1980s, the definition of artificial intelligence basically reflected its ideological content; first, the object of artificial intelligence research is human activities, from which we can find out the general rules. Second, on the basis of exploring the law, the artificial intelligence system is constructed by using computer knowledge to help complete the work that needs to be completed by intelligence. Generally speaking, it is to use computer equipment to build an intelligent system to simulate human intelligent behavior, so as to find out the general rules, so as to replace some aspects of human work. Nowadays, a large number of scientific research workers are engaged in the research and application of artificial intelligence, which gives a higher standard and meaning to artificial intelligence to help human beings free from the shackles of productivity and production relations, so as to realize the deeper liberation of human beings. " For the definition of artificial intelligence, whether it is early or recent, its common point is to learn the way of human thinking, and help human beings liberate from simple and repetitive labor. Therefore, artificial intelligence is defined as the use of computer algorithms to analyze the knowledge used by human beings, realize the development of its reasoning function, learning cognitive function and analytic function, and finally replace part of human work technology [5].

2.2. Main Features of Artificial Intelligence
Designed by human beings, serving mankind. In fact, artificial intelligence is a system based on computer hardware, programmed by human beings and operated according to certain logic and algorithm. Artificial intelligence is designed and manufactured by human beings. It must serve human beings.

According to the human design, it can identify the surrounding environment and generate corresponding emergency behavior. It can interact with human beings. Artificial intelligence system should be designed to feel the information of nature through five kinds of tactile, such as seeing, listening, smelling, touching and tasting, and then answering the outside world through language, words, expressions and actions [6].

It has adaptability, learning ability, evolutionary iteration and connection extension. Artificial intelligence system should have the ability to adapt to the environment and be able to learn independently. It is the ability to adjust the corresponding parameters, data and tasks in real time.
according to the change of environment.

2.3. Existing AI Technologies
Artificial intelligence is a kind of science and technology that studies the extension and expansion of human intelligence by simulating human's thinking mode and learning mode by machine, such as speech recognition, deep learning, emotion analysis, learning analysis and intelligent behavior, so that machines can think and act like human beings, and finally complete the work that only human beings can complete. At the end of last century, computer scientists put forward the concept of singularity. He proposed that computers or robots using artificial intelligence systems can self evolve and produce more advanced artificial intelligence systems than themselves. In the face of artificial intelligence, we cannot overestimate its impact on us, nor underestimate its convenience to life and work. Artificial intelligence has achieved rapid development, and widely used in family life, health care, transportation and other fields, all industries are actively exploring how to use artificial intelligence technology to solve industry problems, education is no exception. According to relevant scholars in China, artificial intelligence is a kind of technology that can increase, use and give ability. It is divided into subjectivity and assistance and is applied in Teaching [7].

2.4. Agent Technology
(1) Concept of agent technology
Agent technology, in a simple way, is to complete its own goals and tasks through the packaging of the environment, which can realize a process from actively searching for the required information to actively visiting the required information. Agent method has entered the field of computer teaching, which provides a new conceptual basis and development prospects for intelligent computer-aided teaching. Agent can be defined as a software entity that can represent the user or other programs to complete relevant operations within a certain range [8].

(2) Application of agent technology
Agent technology has the related properties: autonomy, can control the state and operation, can run independently; sociality, can communicate with other agents or other entities through specific methods; perception, it can feel the real-time changes of the environment; sustainability, can continue to run; reasoning and planning, can analyze the current environment information, the ability of reasonable planning; mobility, the ability to move in the environment; learning, the ability to constantly accumulate experience, through experience to change their future behavior. Through the use of agent into the teaching system, access to the database and related knowledge information base, generate teacher and student models, actively collect students' feedback information, meet students' learning needs, process learning data and teaching data by themselves, formulate learning plans according to the data, and constantly adjust and complete the interaction [9].

2.5. CAN Bus Protocol
CAN is the abbreviation of control area network. In the 1980s, Bosch Company, a famous German automobile manufacturing company, designed a new type of communication network of automobile falling measurement system, namely can (automatic serial controller area network), namely automobile serial bus control LAN. At present, many cars produced all over the world are equipped with CAN bus system. After years of development, this technology has been widely used. At present, the application of this technology is not only limited to the automobile industry, but also widely used in processing industry, machinery manufacturing, textile machinery, machine tools, CNC machine tools, medical devices and sensors and other fields. Can bus has been established as an international standard and is recognized as one of the most promising field buses [10].

2.6. Database Architecture
With the development of information technology, system engineering principles and mathematics, people are more and more inclined to quantify the management process, and use computers to achieve
the purpose of scientific management of information engineering projects. The current data management system and computer technology are inseparable. In the early days, the computer system did not support the sharing of resources and data, only to achieve simple computing functions, and the volume is huge, its equipment is placed in a separate room. Later, batch processing and time-sharing system appeared, which greatly improved the function and performance of the computer system, but the operation of the terminal equipment must be realized by the host. With the development of communication and network technology, remote computer network appears. The network uses communication technology to connect computers from different regions to a central computer, thus realizing the purpose of transmitting and sharing information. With the development of computer network technology, computer network computing mode has also changed, from centralized processing mode to client / server mode. In the centralized processing structure, the task is completed by the host, and the output is realized by the terminal; the host and the terminal are combined together. Client / server is composed of client / server and client / server. In the client / application server / data server architecture (three-tier C / s), the client is only responsible for GUI management. With the development of information and network and the wide application of network technology, the combination of network technology and client / application / data server structure forms web browser / Web server / database server (B / S / s) structure based on Web technology.

2.7. Relevant Calculation Formula
Weighted average algorithm:
\[ \bar{x} = \frac{\sum xf}{\sum f} \]

Average error algorithm:
Repeated sampling:
\[ \mu_x = \frac{\sigma}{\sqrt{n}} \]  
(2)
\[ \mu_y = \sqrt{\frac{p(1-p)}{n}} \]  
(3)
Non repeated sampling:
\[ \mu_x = \sqrt{\frac{\sigma^2}{n} \left(1 - \frac{n}{N}\right)} \]  
(4)

3. Application of Artificial Intelligence Technology in Electronic Information Engineering

3.1. Function Introduction:
(1) Isa communication interface unit
   It realizes the interaction between DSP data and PC data, as well as the transmission of control signals. The communication on ISA adopts IO port access, not memory mapping.
(2) PC processing unit
   Complete the further processing of DSP data, as well as various operations of the master controller.
(3) Experimental interface
   Realize the function of human-computer interaction. On the one hand, the experimental interface completes the display of DSP processing results, data analysis and storage. On the other hand, it is the functional control area for experimenters to carry out various experimental operations. It can operate
the hardware of DSP processing board, set relevant parameters according to the experimental requirements, and control the experimental interface itself, such as display scale, dynamic, static and so on.

(3) Support software:
The application program of DSP on PC can be modified at any time, or further software development can be made at any time according to the need, without operating the hardware of the processing board. This way realizes the multi-function of the system.

3.2. Construction of Performance Evaluation Index System
This paper takes the performance index of CAN bus communication network as a sample. The following principles should be followed in the construction of performance evaluation index system
(1) Comprehensiveness: the selected measurement indicators need not be many, but should be as comprehensive as possible;
(2) Independence: the correlation of the selected measurement indicators should be as small as possible, or even irrelevant;
(3) Clarity: the meaning of factors must be clear;
(4) Measurability: the selected measurement index should be easy to measure, which can be considered as the operability of the specific implementation of factors;
(5) Quantifiable: suitable for calculation and simulation.

4. Application Test of Artificial Intelligence Technology in Electronic Information Engineering

4.1. Evaluation Coefficient

| Table 1. Evaluation Coefficient Tables | A | B | C | D | E | Rating Gross | Fi(%) of functional evaluation coefficients |
|--------------------------------------|---|---|---|---|---|--------------|---------------------------------------------|
| Power suppl                          | 4 | 4 | 3 | 4 | 3 | 18           | 3.6                                         |
| RF segment                           | 5 | 6 | 6 | 5 | 5 | 27           | 5.4                                         |
| Optical Module Work                  | 82| 81| 82| 82| 83| 410          | 82.0                                        |

4.2. Bug Detection

[Diagram of bug distribution]
A total of 107 tests were designed in the functional test, 105 were effective, and 93 bugs were found, of which 97.1% were mild and general type, and there were no fatal bugs. All the bugs have been fixed and closed. A total of 30 test cases were designed for data accuracy test, 30 effective cases, and 41 bugs were found, of which 100% were moderate and general bugs. There were no fatal bugs. All bugs have been fixed and closed. The function of the system meets the user's requirements.

4.3. Data Transmission Success Rate Test

![Figure 2. Platform Transmission Success Rate Test](image)

According to figure 1, in the data transmission success rate test project of the platform, after three rounds of tests, each test time is one minute, the transmission success rate basically meets the demand of more than 80%.

4.4. Response Time Test

|         | One person | Ten people | Twenty people |
|---------|------------|------------|---------------|
| First test | 1.3        | 2.1        | 3.2           |
| Second test | 1.2        | 1.8        | 3.1           |
| Third test | 1.4        | 2          | 2.9           |

After testing, the system function can meet the daily needs. Now we test the response time. According to table 2, the response time in the first test is 1.3s for 1 person, 2.1s for 10 person, and 3.2s for 20 person. The time results of the second and third test are similar, and the response time is within 3S, which can meet the set requirements.

5. Conclusion

At present, the development of electronic information technology is extremely rapid. This paper clearly points out the advantages of artificial intelligence technology. Therefore, the advantages of artificial intelligence technology are clearly pointed out. Therefore, the shortcomings of electronic information technology are optimized and upgraded by using artificial intelligence technology, so that both of them can be reasonably and scientifically developed. In the future work, we still need to strengthen the research of artificial intelligence technology, so that it can better serve the people. In this paper, the concept of electronic information technology and artificial intelligence technology are described. The experimental test shows that the system can well meet the actual needs and meet the expected requirements.
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