Application of artificial intelligence technology in mechanical and Electronic Engineering

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Abstract: In the context of rapid social development, artificial intelligence has been effectively developed, which has greatly improved social productivity and promoted the healthy development of society. At present, artificial intelligence technology has been applied in mechanical engineering and electronic fields, and has achieved certain application results. To stimulate the vitality of social development, China must continue to deeply study the application methods of artificial intelligence technology in the field of Electromechanical industry, master the application skills, and give full play to the positive role of artificial intelligence technology. This paper mainly analyzes the application characteristics of artificial intelligence technology and electromechanical engineering, inspects the correlation between artificial intelligence and electromechanical engineering, and inspects the application of artificial intelligence in electromechanical engineering, hoping to provide effective guidance for the application of artificial intelligence technology in electromechanical engineering.

1. Introduction

With the rapid development of social science and technology, modern artificial intelligence technology has quickly entered people's vision. In the development of mechanical engineering and electronic industry, the application of artificial intelligence has been strengthened, and the degree of automation and intelligence of mechanical engineering and electronic industry has been improved. Accelerating the technological transformation of mechanical engineering and electronic industry, promoting the high precision of electromechanical system control and the high stability of electromechanical equipment are the core of building the electromechanical industry to a new and higher level. Therefore, in the application research of modern artificial intelligence technology in mechanical engineering and electronic industry, relevant technicians should correctly understand the technical core position of modern artificial intelligence technology in the development of mechanical and electronic industry, determine the key points of technology application, and lay an important foundation for promoting the modernization and development of mechanical and electronic industry.

2. Overview of mechanical and electronic engineering and artificial intelligence technology

2.1 Overview of mechanical and Electronic Engineering

In recent years, electromechanical technology has been developed. It is closely related to industry. It is not only an automation technology, but also has the characteristics of electromechanical integration. Electromechanical technology combines traditional mechanical engineering and electronic information technology. From its development, it mainly includes three aspects. First of all, it is mainly manual and needs to be manually operated by personnel in the production process. Secondly, the production process based on assembly line production saves labor to a certain extent and makes the products have the characteristics of standardization. After all, the wide application of mechanical and electrical engineering not only improves the technical level of mechanical production, but also ensures the quality of products. Electromechanical products are highly integrated. Although its basic structure is relatively simple, it has extremely powerful functions, which can reduce the complexity of traditional industrial operations and save resources. Mechanical and electrical design is difficult, but the premise is to improve the construction mode. Under appropriate circumstances, appropriate personnel can continuously enrich mechanical engineering and electronic methods to promote the sustainable development of industrial enterprises.

2.2 Overview of artificial intelligence technology

Artificial intelligence technology has developed rapidly in recent years, which can simulate the thinking mode of human brain and improve work efficiency. Artificial intelligence technology has logical thinking, but it is not limited to logical thinking, but also includes related image thinking. At the same time, if artificial intelligence is to be practiced in reality, it must be based on mathematical tools. Mathematics has a strong logic, which can promote the development of artificial intelligence. The development of artificial intelligence technology has different stages. From the early stage of development, many industrial companies began to use computers. However, since Internet technology has not yet been developed, industrial companies still need to use manual production for development. In the medium term, the Internet has become popular, which has laid a foundation for the development of artificial intelligence. However, due to the low level of technology, artificial intelligence is only applied in a few fields, and the application effect is not optimistic. After all, in the mature stage of development, China's electronic information technology level is getting higher and higher. Artificial intelligence technology has been applied in various fields including mechanical and electronic engineering.

3. Development of artificial intelligence and mechanical and Electronic Engineering

3.1 Development of artificial intelligence

The theory of artificial intelligence first appeared in Mid-17. In the 19th century. During this period, foreign scientists invented the world's first computer. At that time, the appearance of this computer was enough to attract the attention of the world. The first computer is very large and can be operated simply, which is an important foundation for opening a new era of network. After the beginning of the 20th century, the Fifth International Joint Conference on artificial intelligence was held. After the conference, countries have significantly increased their attention to artificial intelligence technology, thus making artificial intelligence enter a stage of rapid development. At the beginning of the 21st century, Internet technology swept the world. In such a technological

environment, the driving force for the development of artificial intelligence is getting faster and wider. At present, the application and implementation of artificial intelligence technology has greatly facilitated people's daily life, also made industrial manufacturing enterprises obtain huge economic benefits, and played an indispensable role in promoting the development of enterprises.

3.2 Development history of mechanical and Electronic Engineering

China's mechanical and electronic development time is relatively late. The earliest mechanical and electronic engineering is mainly driven by human resources. In the production process, enterprises must invest a lot of money in human resources, which has a great impact on the overall income of enterprises. In order to realize the maximum economic benefit and improve the enterprise benefit, the enterprise needs to keep pace with the times, change the production mode and stride forward to the machinery industry. In the development stage of mechanical engineering and electronic engineering, the assembly line operation mode is gradually formed, which can ensure the effective improvement of mechanical product quality. The introduction of mechanical equipment has greatly reduced the input of human resources and improved the production efficiency of enterprises. However, many problems still emerge at this stage. The operation mode of assembly line cannot guarantee the quality of each product. Some unqualified products often appear in the same batch of products. With the rapid development of the times, in the current stage of electronic manufacturing in China, artificial intelligence technology has greater application space. The development of mechanical engineering and electronic engineering has promoted the effective connection between products and the market, thus effectively meeting people's demand for mechanical production. The company pays more attention to electromechanical manufacturing technology, which not only realizes its own economic advantages, but also effectively establishes the company's competitive position in the market.

4. The significance and relationship of the application of artificial intelligence technology in mechanical and Electronic Engineering

The application of artificial intelligence technology in mechanical and electrical engineering can effectively improve the control accuracy of mechanical system. In modular design, it can also be controlled scientifically to improve the accuracy, which plays a great role in the development and operation of mechanical and electrical engineering. However, in practical work, the electromechanical system is strongly affected by the outside world, so it is impossible to carry out accurate control. It must be adjusted according to the actual situation and local environment to ensure the smooth operation of the system. If employees cannot find problems in time, they will not be able to deal with them in time. Artificial intelligence can well replace the tasks of personnel, perform various production tasks through neural network and accurate and efficient control mechanism, check the system and correct the problems or errors found in time, ensure the normal operation of the system and comprehensively improve the work efficiency of the system.

In the information description process of traditional electromechanical industry system, it is difficult to effectively improve the accuracy and precision of information transmission, which leads to the production process of Electromechanical industry. The manufactured products are difficult to effectively guarantee the quality requirements. With the application of artificial intelligence technology, the efficiency of information processing is getting higher and higher, which can provide accurate information data more accurately. The combination of artificial intelligence technology and electromechanical engineering can maximize the processing efficiency of information data, improve the stability of information transmission, solve the current situation of electromechanical technology transmission, and solve the instability problem in the process of traditional information

transmission. The results show that the combination of artificial intelligence and electromechanical technology is an inevitable link in the development of the times, and it is also the main trend in the future.

5. Problems in mechanical and electronic engineering construction

At this stage, we can see that there are still some problems in electromechanical construction, which greatly affect the application efficiency of electromechanical in industry. First, the technology and application resources used in electronic engineering are relatively simple. The combination of mechanical engineering and electronic technology mostly adopts control technology, and uses electronic information technology to complete the control of mechanical equipment. However, in the actual industrial production and mechanical engineering process, the general characteristics of electronic information technology are missing in fault diagnosis and maintenance, which affects the efficiency of the entire electronic equipment. Secondly, artificial intelligence has high requirements for personnel. Although artificial intelligence technology saves manpower and time, China is still in an era of weak artificial intelligence. Therefore, artificial intelligence technology is easy to make mistakes in the operation process and requires professional technicians to operate, debug and maintain. Therefore, in order to better complete the upgrading and development of industrial structure, we must first optimize the talent structure and complete the optimization and upgrading of talent organization to deal with the industrial production problems caused by the failure of artificial intelligence technology.

6. Application of artificial intelligence in mechanical and Electronic Engineering

6.1 Expand the mechanical and electronic market

The application of artificial intelligence technology plays an important role in promoting the development of machinery industry. It can not only significantly improve production efficiency, but also meet the needs of the market. For example, in the general AI market, there are washing machines, vacuum cleaners, dishwashers, audio equipment and televisions. Implemented information. Various products, including smart phones, have not only contributed to the development of the industry, but also contributed to people's daily life. This is why mechanical engineering companies need to use artificial intelligence technology to open up the way for the development of the company according to the actual market conditions. Engineers must combine artificial intelligence technology with the characteristics of electrical engineering, use it reasonably, and assume to understand the operation and parameters of the machine. The core of artificial intelligence technology is neural network system and fuzzy system. As the operation difficulty coefficient of these two systems is relatively high, relevant participants must complete the task through accurate training. The combination of machine engineering and artificial intelligence can achieve a win-win situation.

6.2 Information management and analysis

The application of artificial intelligence in electromechanical engineering can effectively improve the efficiency of electronic engineering, which is mainly reflected in the use of information systems. It can not only ensure that there are no errors and errors in the process of information transmission, but also improve the amount of information transmission and provide guarantee for the safety of electromechanical technology information system. Artificial intelligence technology can also test the information systems of mechanical engineering and electronic engineering, ensure

the accuracy of information systems in input and transmission, and promote the development of electromechanical information systems. For the mechanical information system, it is easy to cause information loss due to the instability of its own system.

6.3 Monitoring and maintenance

In the application of mechanical engineering and electronic engineering, artificial intelligence technology can better complete the monitoring and maintenance of all electronic engineering, and realize the real-time monitoring of all engineering through 24-hour troubleshooting. For example, the application of artificial intelligence in mechanical and electronic engineering of industrial production has replaced human resources to complete most of the work that human resources cannot. Because the whole industrial production has great difficulty and workload, in many cases, the workload affects the performance of the whole electronic technology. As the electronic equipment itself requires high precision, it is common for electronic equipment to have mechanical failures in the production process. In the past, in the process of electronic engineering, the general maintenance method was manual maintenance. This method is too backward, and its maintenance efficiency and accuracy cannot be compared with artificial intelligence. As a result, the efficiency of the whole machine and electronic technology in the industrial production process is reduced. Using artificial intelligence technology can effectively solve this problem. It can realize the real-time maintenance of industrial machinery and equipment, and realize the feedback and processing for the first time when problems occur in the electronic engineering system. The main application core of artificial intelligence technology is the analysis and processing of data and the sending of instructions. Therefore, in the actual production process, installing some wireless sensor devices in various electronic engineering equipment and modules can effectively connect with the intelligent control system, and transmit and process data information through the wireless network. In the working process of the electromechanical engineering system, the data collected by the sensor can also be used to realize the real-time monitoring of the equipment, and the operation data of the equipment can be transmitted to the artificial intelligence system. Once abnormal data is found during the operation of electromechanical equipment, the analysis and comparison of data can be completed, and the analysis module can be used to analyze the cause of the accident in time. Remote troubleshooting of electromechanical equipment. At this stage, the mechanical and electronic industries can install automatic alarm devices to better protect the stable operation of the machine by using the automatic alarm system. When the automatic monitoring and fault analysis of electromechanical technology cannot be completed, the automatic alarm function can be used to remind personnel to repair in time, so as to maximize the efficiency of Electromechanical Technology in maintenance work.

6.4 Application of neural network system

Improving the analysis ability of mechanical and electronic engineering is the most typical application of neural network system. Through the simulation, expansion and expansion of human neural system, an intelligent information output system is formed. In mechanical and electrical engineering, it is mainly reflected in the construction of a large number of neurons to effectively process data and information, and the creation of corresponding functional models to obtain more in-depth analysis results. The application of neural network system can deal with the increasingly complex mechanical problems in the field of mechanical and electrical engineering, which not only improves the intelligent level of mechanical and electrical engineering, but also improves the ability of mechanical and electrical engineering to analyze and deal with problems.

6.5 Application of fuzzy inference system

Fuzzy inference system is an important application of artificial intelligence in mechanical and electrical engineering. It mainly simulates the human brain to fuzzy process information. It plays an important role in pattern recognition, automatic control and decision analysis, and can effectively solve the nonlinear problems in electromechanical engineering. It should be noted that the results and data obtained by the fuzzy demonstration system are not very accurate, and the functions obtained are only fuzzy, but they can play a great role in prediction and demonstration.

6.6 Application of artificial intelligence technology in job object identification.

In the field of mechanical and electrical engineering target recognition, ultrasonic detection, laser scanning and automatic detection technologies in artificial intelligence technology can effectively identify targets and ensure the accuracy of mechanical operation. Ultrasonic sensor technology mainly uses ultrasonic to detect the shape, size and distance of objects to ensure the accuracy of distance data; Laser scanning technology is an important guarantee for data accuracy. Through laser scanning, the object can have clear data information display, but at the same time, the technology is also affected by dust; Automatic identification technology mainly controls the operation of mechanical engineering and electronics through computer technology, and can also issue operation instructions. The application of artificial intelligence in mechanical and electronic industries is very important because it can ensure the accuracy of operation.

6.7 Intelligent production.

Promote intelligent manufacturing process, and realize intelligent production planning and planning, intelligent production collaboration, intelligent equipment link, intelligent resource management and intelligent decision support. Build an intelligent manufacturing system with intelligent technologies such as new sensor identification system, intelligent control system, industrial robot and automatic complete production line as the core, and build an intelligent manufacturing base with international competitiveness. At present, Haier has built the Cosmo platform, realizing the organic combination of mass production and personal customization. Kute c2m model creates a business model and o2o sales model. Customers directly control the factory through online ordering and offline experience, increasing customer responsibility. Shuangxing advocates the strategic policy of "using intelligence to achieve the simplest mode, using intelligence to achieve the acme of products, and using intelligence to achieve a very short distance with users", promotes the integration of artificial intelligence and high-end manufacturing, establishes digital workshops and intelligent factories, and comprehensively improves the intelligent level of manufacturing processes in traditional industries such as petrochemical, rubber, steel, automobile, textile, food, etc.

7. Conclusion

At this stage, China pays more attention to mechanical engineering and electronics. There are still many problems in the field of traditional mechanical and electrical products. In order to effectively solve and improve the production mode, we need to continuously integrate advanced science and technology. The development of artificial intelligence technology has gradually matured. The application of artificial intelligence technology in the field of mechanical and electrical engineering can effectively improve the automation of operation and production links in this field. Technicians should be able to combine the advantages of these two methods to promote

the progress of mechanical engineering and electronic technology in China.

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