

# Intelligent Technology Analysis in Electronic Engineering Automation Control

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**Abstract:** The reason why human society will develop more and more civilized and intelligent is because human beings are becoming more and more intelligent and their demand for scientific and technological intelligence is increasing. It is precisely because of human's continuous pursuit of superior artificial intelligence that the improvement and development of China's electronic engineering automation system has been promoted. Intelligent technology is also gradually applied to the automation system of electronic engineering, which brings great convenience to electric power engineering. The wide application of intelligent technology in electronic automation system is conducive to the improvement of the control level of electric power system in China and the improvement of people's living standard. This paper mainly analyzes the intelligent technology in the electronic engineering automation control, and narrates its advantages, characteristics, present situation and application for your reference.

**Keywords:** Electronic engineering; automatic control; smart technology

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## Introduction

With the rapid development of information technology, the automation of electronic engineering begins to develop towards a more intelligent, automatic and information direction. The extensive application of intelligent technology has improved the quality of products, greatly improved the production efficiency, reduced the working intensity of employees, and promoted the improvement of electronic engineering automation system. The application of intelligent technology in electronic engineering automation system is a subject worthy of social attention<sup>[1]</sup>.

## 1. Development of automation systems in electronic engineering

With the rapid development of China's social economy and the continuous improvement of people's living standards, people have more and more demands on electricity and higher requirements on automation of power engineering. As an important development project, power development should find out and solve problems in power engineering timely. In the process of actual electricity utilization, the safety problem of electricity utilization often appears, which leads to the inevitable accident safety accident. Therefore, in the process of actual electricity use, it is necessary to strengthen supervision and control, raise safety awareness, increase the importance attached to power applications, and avoid safety accidents, so that the power system can operate safely and smoothly. In the traditional supervision system, most of them are supervised and controlled by people, and there are many shortcomings. However,

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with the development of electronic information technology, the supervision system has been greatly improved and the goal of real-time monitoring has been realized, thereby improving work efficiency, reducing work intensity, reducing the error rate, and ensuring the stable operation of the power system. Therefore, the development of smart technologies and application are very important to electronic engineering.

## **2. The advantage of intelligent technology in the application of electrical engineering automation**

### **2.1 It is conducive to the optimal allocation of human resources**

In traditional engineering projects, there are many and complicated electrical equipment, including transformer, circuit, electric relay and so on. These devices are also very difficult to operate, and maintenance of the equipment also requires professional repair. However, if intelligent technology is applied, the above situation can be improved, the application of electrical equipment can be reduced, and manpower can be saved, so as to optimize the allocation of human resources.

### **2.2 Strong independence, will not be affected by the external environment**

The traditional electrical engineering is easily affected by the external environment, thus affecting some important parameters. As a result, the modeling of the controller is affected, the controller cannot work normally, and the production efficiency is seriously affected. Problems with controller modeling other than affecting production also affect schedules. The application of intelligent technology can reduce the occurrence of this problem, guarantee the safe operation of production, improve the production efficiency, reduce the interference of external environment, and improve the stability of control system.

### **2.3 Simplify the debugging process and improve management efficiency**

With its obvious advantages, intelligent technology can be widely used in electronic engineering. It has many advantages: It has strong fusion capability, and it can achieve perfect integration in complex automatic control system. Secondly, it is easy to operate and has a clear process. This advantage allows it to function even without professionals. At the same time, it also saves manpower and money, and the maintenance cost of equipment is also reduced correspondingly. At the same time, the working efficiency is greatly improved. The application of intelligent technology can divide the existing system and make corresponding modifications to promote production<sup>[2]</sup>.

## **3. Application of intelligent technology in electronic engineering automation control**

### **3.1 Increase work efficiency**

In the application of intelligent technology in electronic engineering automation control, its biggest function is to effectively improve the work efficiency and make up for the deficiency of traditional electronic engineering. It not only saves manpower and time, but also reduces the intensity of work. It also improves the accuracy of data calculation and greatly simplifies the work process. Without staff in the design work after a complex process, as long as using intelligent technology can complete the corresponding data analysis, avoid the traditional design manual calculation mistakes in our work. The application of intelligent technology has saved a lot of time for electronic engineering work, and gradually improved the disadvantages of traditional electronic automatic control system, thus improving the work efficiency.

### **3.2 Improve the stability of automatic control**

The application of intelligent technology in electronic engineering automation control system can guarantee the stable operation of the system. There are many shortcomings in the traditional automation control system. In addition,

the lack of professional level and operation technology of the staff make the automatic control system unable to run smoothly. Therefore, the application of intelligent technology can improve the above situation and stabilize many problems in the operation of the system. For some complicated operations, smart technology can solve it by itself. And staff need to be carried out in accordance with the process stable automation control, so you can avoid errors caused by workers improper operation, reduce the occurrence of safety accidents, make electrical engineering automation control system can be safe and steady operation.

### **3.3 Regulate electronic engineering control system**

Intelligent technology is a new and high technology in modern times. It can realize real-time adjustment of electronic engineering automation system and promote the improvement of work quality and efficiency of automation control. Compared with the traditional automatic control system, the intelligent control system has the function of efficient regulation and control. In the field of modern electronic engineering, intelligent automatic control system has great advantages, in the absence of professionals can still be controlled by the control system of automatic adjustment, achieve the goal of the electrical engineering automation control greatly.

## **4. The status of intelligent technology application in electronic engineering**

### **4.1 Smart technology has not yet fully developed**

At present, electronic engineering automation control is mainly used to diagnose equipment failure and optimize the system. However, the imperfection and immaturity of the intelligent technology make the diagnosis function of the automatic control system unable to be realized effectively, and even the diagnosis error may occur. If the diagnosis is made manually, the error rate will be greater, and it is not superior to the automated system. Different enterprises have different requirements for electronic engineering automation control, and they have different conditions. As a result, there are some differences in the application of intelligent technology. The development process of intelligent technology is troublesome and costly. Therefore, some enterprises only develop a certain part of automation control according to their own requirements, so as to realize a wide range of applications.

### **4.2 Intelligent lack of technological innovation**

The development of intelligent technology in China is slow and the technology is not very mature, so the fault diagnosis and system optimization cannot be realized well in the practical application process. In addition, the level of innovation cannot keep up with the demand, which affects the development speed of intelligent technology, affects the work efficiency and quality, and hinders the development of enterprises. The development of intelligent technologies requires a lot of manpower, material resources, and financial resources. If these inputs and outputs cannot be directly proportional to each other, the effective development of intelligent technologies cannot be realized, and the economic benefits of enterprises cannot be realized. Therefore, the investment in the innovation and research and development of intelligent technology is also relatively reduced, so the development strength of enterprises will become weaker and weaker.

## **5. Application of intelligent technology in electronic engineering automation control**

### **5.1 Intelligent technology application in fault diagnosis of electronic system**

It is not unusual for an electronic engineering system to break down in the course of operation, and it is difficult to repair the fault. Therefore, the establishment of a system neural network, fuzzy logic program and expert system by using intelligent technology can locate and diagnose the faults of automatic control system in electronic engineering. In this way, it can help maintenance personnel to repair and repair, greatly improve the accuracy of troubleshooting, and play a good role in promoting the development of electronic engineering automation<sup>[3]</sup>.

## **5.2 Optimize the design of electronic products**

Electrical mechanical equipment is one of the components of electronic engineering. The design process of electrical equipment is complex and involves a wide range of knowledge. Therefore, it requires the staff not only to have rich theoretical knowledge but also to be able to skillfully use the knowledge, and also to have corresponding operating skills. The design process of traditional electronic products is usually designed by designers according to their own experience, so the adaptability and rationality of electronic products cannot be guaranteed. However, the development of computer network technology has brought great convenience to the design and production of electronic products. Combined with the computer network technology, changed the traditional electronic product design, the method of the electronic product design more reasonable and practical, at the same time saved product development time. With the strong support of intelligent technology, electronic CAD technology has developed gradually, and has been widely used by expert system, optimized and improved electronic products, and promoted the production efficiency. Genetic algorithm can process a large amount of computing information and ensure accuracy, which can play a good role in the design and production of electronic products.

## **5.3 Application of intelligent control in electronic engineering management**

The application of intelligent technology is mainly to promote the automation, integration and systematic realization of operation technology. The development of this technology has promoted people's production and life, and at the same time has saved the labor force and provided more impetus for the development of the enterprise. In the actual work process of subprojects, it has an efficient operating system and strong thinking ability. However, the factors that affect the normal operation of the system have also gradually increased. As a result, in the actual production process, there are often operational errors. Influencing production efficiency. In order to improve the above situation, the application of intelligent technology is very necessary to realize the intelligent prohibition of electronic engineering. Intelligent technology than traditional electrical engineering automation technology management more targeted, except to adjust and control system, the supervision and control of the process also has a certain effect, but also has obvious effect in reducing errors, while improve the efficiency of management, also save the time.

## **5.4 Ensure the accuracy of data content**

The application of intelligent technology can record and integrate the content generated in the automation control of electronic engineering. By analyzing these contents, new contents can be formed. There are many similarities between traditional artificial technology and intelligent technology in data processing. For example, pens, notebooks and other tools are needed for recording and calculation of artificial technology, and memory is the notebook tools of intelligent technology. The calculator is the abacus of intelligent technology, and the output device is the pen of intelligent technology. Before the application, the operational data and calculation steps should be input into the memory. The arithmetic unit mainly includes trigger, register and adder. Its main function is to calculate. The data is then processed using an adder and the calculated data is stored in memory. Output device includes display, plotter, printer, etc. Its main function is to output the structure of data operation. Intelligence technologies not only the contents of the data processing computing has obvious use, its operation speed is quite fast, this is than the traditional manual technology, intelligent technology in electrical engineering automation control has a very important role.

## **5.5 Complete more operational tasks**

In the actual working process of electronic engineering, various content demands will be generated, and the support of intelligent technology can effectively help control system to manage different content. In some complicated task, intelligent technology has its own operation mode, so to the actual request is not high, professional operation to reduce the false positives, helps to maximize the efficiency of the whole system, improve operational efficiency of the system. The traditional operating system works with a single content and cannot handle multiple content. And smart technology has changed the situation of application of the multiple objects can be controlled, can also be targeted to a

certain content of control, and reduce the operation difficulty, enhance the use efficiency of the electrical engineering automation control system<sup>[4]</sup>.

## **6. Development of electronic engineering intelligence technology**

### **6.1 Expand the application scope of intelligent technology**

The scope of application of energy technology is very broad. Just like the application of computers, computers at the beginning were only the machines in the laboratory and then basically developed into computers for every household. This is the trend of computer development and the trend of the times. In order to meet the needs of more users, the computer has to keep developing and innovating, upgrading and upgrading its technology. In the automation control of electronic engineering, besides the production problem of the product, there is also the inspection of the product and the maintenance control of the machine fault. Intelligent technology applied to the product testing program can optimize testing procedures, increase speed, and facilitate personnel control and management. There are many kinds of electronic products and complicated data and information, and researchers of related technologies need to design computer programming according to the actual situation. The intelligence is reflected by the programming language, so computer programming and computer technology are part of the intelligent technology. Intelligent fault handling is the intelligent technology is applied to other areas, and intelligence of primary fault is mostly mechanical's own fault, but with the continuous development of science and technology, the intelligent technology will be able to implement mechanical failure of serendipity, increase the the development of electronic engineering company.

### **6.2 Improve the overall quality of technical researchers**

The professional quality and ability of technical personnel are of vital importance to the development of electronic engineering enterprises. Therefore, if the enterprise wants to develop steadily for a long time, it must continuously improve the professional level and professional quality of the technicians. The introduction of advanced talents, to conduct professional training for employees, improve their technical level, the strengthened enterprise talents, so as to promote the promotion enterprise's technical level, the development for the enterprise to provide more power. At the same time, enterprises should continue to innovate, update technology and store more energy for enterprises.

### **6.3 Improve smart technology**

In addition to the optimization of computer programs, intelligent technologies must be optimized for electronic engineering automation control intelligence systems, so that the system is more standard, intelligent, integrated, modular. The improvement of operating speed of control system must be integrated. Standardized implementation can improve product performance, which can reduce production costs. In conclusion, the application of intelligent technology can promote the development of electronic engineering automation control technology<sup>[5]</sup>.

## **Conclusion**

In summary, the development of intelligent technology has promoted the development of electronic engineering automation technology and affected the daily management of enterprises. During the application of intelligent technology, the intelligent control system should be analyzed according to the characteristics of the system. Optimization of electronic automation control system, the intelligent technology more widely applied to various fields, enterprises must strengthen technology research, invest more manpower, financial and material resources, promote the development of electronic engineering progress.

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