Application of AI Technology in Automatic Control System of Medical Equipment

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Abstract. In this digital age, mankind has also gradually opened up a new intelligent society, especially the emergence of artificial intelligence, marking that human society has entered a completely new page. Medical equipment is one of the key areas for the development of artificial intelligence technology. In the future development, artificial intelligence will certainly be very extensive in this field, and a comprehensive platform for the integration of medical equipment and artificial intelligence will be built, making intelligent medical equipment an important symbol of the development of artificial intelligence. This article first introduces artificial intelligence technology, then talks about the application and development of artificial intelligence technology in medical equipment, and predicts the future development of artificial intelligence in the medical field.

Keywords: Artificial Intelligence Technology, Medical Equipment System, Application Development

1. Introduction
In recent years, with the improvement of human science and technology, artificial intelligence technology has achieved leapfrog development, making information technology undergoing essential changes, and it can be said that it has entered a brand new era. Artificial intelligence technology is also known as "AI technology". It relies on the support of big data, so that cold machines have the ability to achieve high-quality services for mankind, and stand at the forefront of technology and the times. Although artificial intelligence technology is still at a critical stage of research, its products have been applied in many fields such as video surveillance, military, electronics, medical treatment and intelligent robots, and have received good feedback and expectations. Especially the application in the field of medical equipment has great development potential for artificial intelligence, and will also have a positive and far-reaching impact on the future development of the medical industry and technology [1].

2. Analysis of artificial intelligence technology
The concept of artificial intelligence first appeared in 1956. This is an academic argument put forward by John McCarthy and others. Since then, artificial intelligence has gradually developed in society.
With the development of social technology, artificial intelligence has developed into reality under people's initial expectations [2]. It covers many fields, including mathematics, philosophy, linguistics, psychology, and computer science. The core is the use of science and technology to give human intelligence the essence, through the simulation of related concepts, forming an extended and extended comprehensive technology. The biggest difference between artificial intelligence and previous technologies is that it is no longer a simple task machine, but a simulation system composed of a core intelligent chip. Have certain learning ability and thinking ability, and can also correspond to daily language communication. With the continuous development of artificial intelligence, this technology has also shown its potential in continuous practice. It has been widely discussed and concerned around the world, and has created a series of gospels for mankind [3].

3. Application value analysis of artificial intelligence technology in the medical field

3.1. To promote the quality of medical services
Due to social progress and economic development, the quality of social life has improved significantly. At the same time, people's awareness of health is getting stronger and stronger, and people's health awareness is gradually increasing. Medical care has become a hot industry in this society. As a social security service organization, the quality of medical services not only determines the social security capacity, but also directly affects the patient's experience in seeing a doctor. Due to the limitations of technology, efficiency and information processing, the field of traditional medicine has been criticized by society. In addition, the application of artificial intelligence technology in the medical field will promote and significantly improve the current underdevelopment. Artificial intelligence technology based on network information technology executes from patient diagnosis, information transmission, prescription analysis to big data processing and analysis, implements simplified operation mode, releases audit plans and costs, efficiency and accuracy can effectively solve problems and significantly improve medical care service quality [4].

3.2. To improve the level of medical technology
The application of artificial intelligence is embodied in all aspects, not only serving humans, but also embodied in its own value. Medical equipment is the core equipment for medical examination and operation. Traditional medical equipment systems are complex and require high technical requirements for personnel. In practical applications, many input operations are usually required to make medical equipment operate stably. Artificial intelligence technology solves this problem very well. It no longer needs complicated technology to operate medical equipment, and it can also realize the resource sharing of medical equipment in information technology. In recent years of medical development planning, artificial intelligence has taken on part of the responsibility, such as realizing remote diagnosis and treatment through it, and gradually trying more advanced applications and services to enable patients to receive more professional treatment and services. At the same time, artificial intelligence can also realize the integration of medical technology, such as intelligent image recognition, intelligent health analysis, intelligent diagnosis, etc., so that the level of medical technology can be unified and standardized under the overall picture, and the level of medical technology is continuously improved [5].

4. The application scenario of artificial intelligence technology in medical devices

4.1. Application of artificial intelligence technology in medical robot
Medical robots is an important symbol of human medical technology development, it makes the traditional essential changes have taken place in the health care industry, medical robots have largely replaced manual, at the same time of improving the efficiency of medical service, the medical operation more convenient and accurate, reduce the medical risk of wrong operation, also reduce the patients on the pain, is also for this reason, make medical robots is widely recognized by society. With
the continuous improvement and maturity of artificial intelligence technology, the new intelligent medical robot further improves the application field of medical robot, and also becomes more intelligent and humanized. At present, the research and development of medical robots also entered the crucial stage, which represented by Watson (Watson), leonardo Da Vinci, a large number of medical robot based on artificial intelligence technology arises at the historic moment, in practice they can easily realize the check of the tumor and minimally invasive surgery operation, the medical technology in unprecedented new height, also from the Angle of the development of science and technology, interpretation of the concept of medical technology development [6].

4.2. Application of artificial intelligence technology in medical imaging equipment

Medical imaging equipment is mainly used for general CT, ultrasound, X-ray and other pathological examinations of patients to help doctors obtain patient information and improve the efficiency of doctors and medical procedures. This will help. Medical shock equipment based on artificial intelligence technology can change the information delay problem of traditional imaging equipment, obtain real-time diagnosis results, improve diagnosis efficiency, and ensure diagnosis accuracy. Its technical application is divided into two main parts. The first part is intelligent image recognition [7]. It mainly depends on the technical knowledge of the device itself and aggregates the technical information obtained through the artificial intelligence data collection function. The second part is deep learning, which is also the core of smart imaging equipment. Use unique intelligent software to analyze system integration data, conduct in-depth learning and information analysis through neurons, create and load a complete diagnostic program to check the entire image. Its important advantage is that it can significantly improve diagnostic efficiency, diagnostic accuracy and stability, and effectively avoid medical risks.

4.3. Application of artificial intelligence technology in drug r&amp;d equipment

Drug research and development is a complex and extremely important project, which has a direct impact on the efficacy and safety of drug use in the future. However, drug research and development relies on a systematic equipment system rather than a single equipment, which includes genome equipment, biological information acquisition equipment and other sophisticated equipment. With the development of science and technology, the composition of equipment is becoming more and more complex, and the pressure on manual operation is also gradually increasing. With the application of artificial intelligence technology, problems in drug r&amp;d system can be readily solved. Artificial intelligence technology to be able to use the equipment, the coordination between the drug mechanism, molecular structure, integrating effect experiment and so on each link, and make the drugs greatly shorten the development cycle, and through its complex, precision analysis of data, can to evaluate information and safety of drugs, drugs for reducing the risk of failure, the r&amp;d funding costs under control, improve the economic benefits of the drug development [8].

5. Medical equipment management system structure

5.1. System network architecture

In a web development system, every data access request must go through the following series of steps: establishing a database connection, opening the database, accessing data, and closing the database. When the amount of information expands day by day, such as still adopting the ordinary B/S structure model, it takes up a lot of resources and time-consuming, resulting in a sharp drop in system performance and even a crash. In the medical equipment management system, we will adopt a three-tier B/S architecture and use middleware to divert client services. Since many business logics are concentrated on a single application server, the division of labor between expression logic, business logic and database system is clear, which reduces the cost of the overall system, is easy to maintain and upgrade, has good scalability, and improves network efficiency and manageability Strong sex [9]. More importantly, good reusability: build applications through the provided services, and each service
can be reused for different applications. As an object-oriented component type and a service composed of multiple reusable components, it further improves the reusability of the system. Figure 1 shows the system network architecture diagram.

5.2. System basic process analysis
The medical equipment management system is an application system based on the Internet environment. At the same time, it is also an important step towards the electronic and networked equipment management of the unit. Therefore, the basic characteristics and requirements of the original management method should be considered when analyzing the requirements of the system. On the other hand, it is necessary to consider the characteristics and requirements of the application system under the network environment [10]. Figure 2 shows the basic flow chart of the system.

Figure 2. Basic flow chart of the system

6. Conclusion
With the continuous progress and development of science and technology, the theme of future social development continues to change, and artificial intelligence technology is gradually developing. This technology with advanced neuron technology is very useful in many fields. It can effectively improve the operation and application capabilities of medical equipment, and further improve the depth and
efficiency of data and information processing. From the perspective of the law of social development, artificial intelligence has the advantages of artificial intelligence technology, which can perform the automation of medical equipment, such as medical treatment, diagnosis, physical examination, medical planning, archiving, etc. And provide better services. medical service. The current state of management and manual exchange makes the concept of autonomous health a reality. In the future, broad interest in medical issues in today's society will increase. Finally, we hope that artificial intelligence technology will take greater steps to accelerate its widespread application in the medical field, see the formation of new medical models in the near future, and show the development of medical services over time.

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