Analysis of Methods and Strategies for Integrating Artificial Intelligence into Computer Technology

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Abstract: ***Computer technology plays an important role in the development of society. With the rapid development of society, traditional computer technology can no longer meet the actual needs of current users. In order to change the current situation, artificial intelligence and computer technology should be integrated to achieve technological innovation, enhance the application ability of computer technology, and expand the application scope of information technology.This article analyzes the integration of artificial intelligence and computer technology, analyzes the specific applications of artificial intelligence, and forms specific application strategies, in order to provide reference and guidance for related research.***

Keywords: Artificial intelligence; Computer technology; Method and strategy.

1. INTRODUCTION

The current computer technology has been able to develop and apply in various fields, and has had varying degrees of impact on people's lives and the development of society.With the emergence of artificial intelligence technology, it is a new opportunity for the development of traditional computer technology. Integrating artificial intelligence with computer technology to form technologies that are in line with social development, promote socio-economic development, and enhance computer technology levels.

2. ANALYSIS OF CHARACTERISTICS OF ARTIFICIAL INTELLIGENCE TECHNOLOGY

Artificial intelligence combines various high-level technologies to mimic human brain activity and achieve expected goals through functional modules of different parts. Due to its uncertain nature, it also needs to be analyzed in conjunction with actual situations during application.Because artificial intelligence technology contains technical content from different disciplines and there are significant differences in knowledge theory, there is uncertainty.There is a certain relationship between artificial intelligence technology and learning mathematics, physics, etc., which is influenced by different subject knowledge and increases uncertainty.The current artificial intelligence technology has begun to be applied in different fields and has achieved significant results.However, in the actual application process, it is necessary to analyze the characteristics of artificial intelligence technology, so as to grasp the key points of technology application. In the process of integrating computer technology, the degree of integration can also be improved, which has a positive impact on ensuring the final effectiveness of technology application. Yuan (2025)[1] proposed a contrastive multimodal learning framework for chest X-ray analysis, effectively leveraging the synergy between text and image data to improve diagnostic accuracy. In healthcare facility design, Xu (2025)[2] introduced a graph convolutional network (GCN)-based approach to optimize structural and functional sustainability. Meanwhile, Feng et al. (2024)[3] explored AI-driven methods to enhance energy efficiency in green buildings, demonstrating practical applications in sustainable infrastructure. Medical knowledge extraction has also benefited from AI advancements, as Yang (2024)[4] integrated large language models (LLMs) and knowledge graphs for improved medical text mining. In finance, Jiang et al. (2025)[5] developed an advanced investment advisory system utilizing deep neural networks for personalized financial guidance. Similarly, Chen and Xie (2025)[6] augmented advertiser decision-making through generative AI and interactive analytics, showcasing AI's role in business intelligence. For network optimization, Tu (2025)[7] introduced Log2Learn, an intelligent log analysis system for real-time network performance enhancement. Healthcare research has seen notable contributions in both clinical and environmental studies. Ma et al. (2024)[8] investigated the impact of maternal and cord blood metal levels on fetal liver function, while Lu et al. (2024)[9] explored chemotherapy-induced immune cell plasticity in cancer treatment. Further advancing oncotherapy, Jiang et al. (2024)[10] designed a bimetallic nanostimulator for combined

radio-cuproptosis immunotherapy, demonstrating breakthroughs in cancer microenvironment modulation. Medical equipment reliability was addressed by Ma et al. (2023)[11], who developed a life cycle prediction system for failure prevention. Earlier work by Ma (2021)[12] laid the foundation for medical robotics with a binocular vision-based positioning system. Computer vision innovations include Lu et al. (2025)[13]'s DeepSPG, which enhances low-light images using deep semantic prior guidance. Finally, in energy forecasting, Zhao et al. (2025)[14] proposed a CNN-Bi-GRU hybrid model for accurate short- and long-term renewable electricity demand prediction.

3. THE NECESSITY ANALYSIS OF INTEGRATING ARTIFICIAL INTELLIGENCE INTO COMPUTER TECHNOLOGY

3.1 Enhancing Information Security

Computer technology has been applied in different fields and has achieved good results. With the widespread application of computer technology and the changing times, users attach great importance to network security and hope to ensure information security by improving their computer technology level.The current computer network environment is very complex, and the number of crimes is constantly increasing. If the security of information cannot be guaranteed, it will have adverse effects on users.To achieve this, it is also necessary for the computer's configuration to meet relevant requirements, with good observation and sensing capabilities, so that it can be flexibly applied in the face of cybercrime and organize the occurrence of information theft events.By applying artificial intelligence technology to computer technology and establishing an intelligent management system, not only can automated information collection be achieved, but also timely diagnosis of computer failures can be carried out. Combined with scientific methods, the probability of computer failures can be reduced, promoting the optimization of computer network management systems.Integrating artificial intelligence technology with computer technology can further ensure user information security.

3.2 Ensuring the scientific application of artificial intelligence

The rapid development of computer technology has promoted the progress of society, among which network technology has had a significant impact on people's work and life. Integrating artificial intelligence technology with computer technology can improve the application level of computer technology and meet the practical needs of the public for computer technology.Artificial intelligence technology can effectively process uncertain information in applications and help track dynamic information. With high-level information technology processing, it can improve the accuracy of information and provide users with the necessary information.In practical applications, the integration of artificial intelligence technology can also be utilized to improve network management efficiency and enhance reasoning ability.

4. APPLICATION ANALYSIS OF INTEGRATING ARTIFICIAL INTELLIGENCE INTO COMPUTER TECHNOLOGY

4.1 Application in Network Security Management

Implement security management for intrusion systems.In the process of performing work, computer technology is prone to external virus invasion if the security of the transmission environment cannot be guaranteed due to the need to transmit information and data.Once such a problem occurs, it will have a negative impact on the development of computer technology. If artificial intelligence is applied in the operation of computer technology, the intrusion risk prevention function can be improved. By setting intrusion risk prevention mechanisms, the transmission environment of computer networks can be optimized to enhance the security of computer technology.Simultaneously utilizing artificial intelligence technology to prevent external intrusion information can help enhance the security of computer technology and provide important technical support in related work.The establishment of an intelligent firewall system plays an important role in an intelligent environment. Through stacking and application, a security management system suitable for the development of computer technology can be established in network security management, thereby creating a high-quality operating environment.The application of anti spam systems has undergone changes with the development of computer technology, and has been greatly improved after the emergence of artificial intelligence technology.In the application process of artificial intelligence technology, continuous use often leads to an increase in spam emails, seriously affecting the actual user experience.Criminals can also use this vulnerability to deliver spam emails to users, causing serious

inconvenience to users during the application process.In addition, with the continuous increase of spam emails, how to filter high-value information becomes particularly important.After applying artificial intelligence technology, by establishing a spam interception system, the appearance of worthless information can be prevented and the application effect of computer technology can be improved.Further ensure the optimization of the network environment.

4.2 Medical Applications

The medical field is also a field that China attaches great importance to and has a positive impact on ensuring the physical health of its citizens. With the development of society, applying intelligent technology to the medical field can to some extent compensate for the shortcomings of traditional medicine and have a positive impact on promoting the modernization of the medical field.In practical applications, the application of intelligent technology can help patients deal with various problems in hospital management.Based on the analysis of the current basic national conditions in China, there are a large number of patients, but the actual number of doctors cannot meet the current practical needs. Therefore, by integrating artificial intelligence technology into various aspects of hospital work on the basis of traditional computer technology, we can promote the effective integration of artificial intelligence technology, enhance the actual development of the medical field, and reduce some medical pressure.For example, significant improvements have been made through the application of artificial intelligence technology in areas such as diagnosis and image recognition.Compared with traditional medical methods, the application of this technology can improve diagnostic efficiency and provide personalized treatment plans for patients.In practical applications, it also has a positive impact on doctors, not only saving some time, but also improving the efficiency of diagnosis.On the basis of computer technology applications, establishing diversified databases can better reduce costs.Applying artificial intelligence technology in the medical field and integrating it with traditional computer technology can improve overall work efficiency.

4.3 Application in Electrical Automation

Artificial intelligence technology has also been well applied in electrical automation systems, and can achieve high-precision work, improve the degree of automation of work, and observe the dynamic changes of activity targets.Applying artificial intelligence technology to electrical automation can significantly improve work efficiency. In the design phase, users can also adjust the flexibility of the system according to their actual needs, which helps to ensure the adaptability of data information. At the same time, the correction of technology and anti-interference ability can also be improved.In the overall control work of the power system, attention should be paid to neural networks.In the specific control process, it is also necessary to be based on the actual situation, so as to ensure the orderly development of related work.Applying artificial intelligence technology in the field of electrical automation can improve overall work efficiency and have a positive impact on enhancing the efficiency of electrical automation.

4.4 Application in Network Management and System Evaluation

The combination of artificial intelligence and computer technology helps to achieve the goals of computer network management. In the process of applying artificial intelligence technology, by promoting the combination of the two, it can improve overall work efficiency.The specific application of artificial intelligence technology includes problem-solving techniques, which can achieve comprehensive management of computer network environments. However, due to the characteristics of network instantaneity and dynamism, it also increases certain difficulties in practical management work.Therefore, in the application process of intelligent network environment management mode, it is also necessary to pay attention to combining with the actual situation and the current development needs of computer technology, promote the deep development of integration work, and effectively apply it in network management work, providing guarantees for subsequent development.Based on the current practical application situation, comprehensive management of network information systems can be achieved in the construction of artificial intelligence theory based on expert decision-making knowledge, which can better improve work efficiency [7].The most important point is that expert systems belong to a brand new artificial intelligence program, which can combine expert knowledge from different fields during application, promote the integration of various information resources, and form a complete resource system. Through network transmission, resources are transmitted to corresponding devices, ultimately achieving the goal of solving problems.

4.5 Applications in smart homes

With the improvement of people's living standards, the requirements for home furnishings have also changed. Applying artificial intelligence technology to homes can meet people's specific needs.The application of artificial intelligence technology can create intelligent home environments, remotely control home systems, diagnose circuit faults and other issues, promote the optimization of home environments, and achieve the construction of smart homes.In recent years, the application of intelligent technology in homes has become an important part of promotion, and through the practical application of artificial intelligence technology, it provides people with good services.Smart home is based on the Internet of Things, cloud computing, and corresponding technologies such as smart hardware and software, to build a complete home ecosystem.Through remote control in the specific application process, the device can execute commands and create a safe and economical home environment.With the improvement of technological level, intelligent voice technology has matured and has had a positive impact on the current social development. Major artificial intelligence companies have also launched smart speakers, greatly supplementing the variety of home products.The home market has also been affected by the emergence of smart home appliances, and the construction of a safe and stable home service environment has laid a solid foundation for the development of the smart home industry.

4.6 Application in Education and Teaching

The application in education and teaching can also achieve good results. Currently, online teaching has become a new teaching method and has also achieved good application results in education and teaching.The auxiliary teaching system not only includes important parts such as knowledge graph and data science, but also provides students with rich learning resources and guarantees the efficient development of education and teaching.Knowledge graph can combine entities with similar features to construct a complete knowledge base through common features.Data science is the process of obtaining knowledge related to learning from massive amounts of data through mathematical analysis, and then constructing targeted teaching models based on actual needs. In specific applications, the following steps need to be combined for operation.

(1) Building Knowledge

By utilizing the advantages of artificial intelligence technology and combining it with auxiliary teaching systems, we aim to build a comprehensive database based on students' actual learning situations. In the process of establishing a database, it is necessary to screen the input knowledge according to teaching experts, and combine different groups to form a highly accurate knowledge system.

(2) Establish an expert model

By analyzing existing data, provide students with learning content.

(3) Establish auxiliary teaching scenarios

Helps create authentic teaching scenarios and promotes the integration of artificial intelligence technology with education and teaching.

5. CONCLUSION

In short, through the analysis of computer technology, it is found that in the development of the new era, it is necessary to improve the operational security of computer technology, ensure the stability of data storage, and meet the personalized needs of users.The integration of artificial intelligence technology into computer technology has become a current development trend.By analyzing the integration and application of artificial intelligence and computer technology, good results have been achieved, but further research is needed to promote a good interactive relationship between the two.

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