Research on the Application of Artificial Intelligence Technology in the Construction of Modern Intelligent City

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Abstract: Intelligent is a new model of intelligent urban life and management, and it is an important stage of urban development. Intelligent city is the fourth industrial revolution after the industrialization, electrification and informatization of the city. Thanks to the continuous breakthrough of technology, artificial intelligence (AI) is everywhere in life, and people are enjoying the convenience and efficiency brought by AI. AI has gradually integrated modern information and communication technologies into the construction of intelligent cities, and will play an increasingly important role. The intelligent city of the future will be a intelligent city with AI as its core. It is of great significance to discuss AI's contribution to intelligent city construction. This paper introduces the background and challenges of the rise of AI, analyzes the practical application of AI in intelligent cities, and puts forward the countermeasures of building intelligent cities with AI as the core.

1. Introduction

The intelligent of the city is the product of the birth of the new era and the witness of the progress and growth of the city. Building a intelligent city has become an inevitable requirement of the times. But for many people, AI seems too high-end, and it is difficult for ordinary people to have the opportunity to enjoy the services of AI[1]. The update and application of Internet, Internet of Things, cloud computing and other technologies, as well as the rapid growth of data types and quantities in various fields of economy and society, make AI come into being at the right time, and gradually penetrate into many fields of society and the production and life of the public, which has brought great changes to the production mode of public life[2]. The key technology of building a intelligent city is to make use of AI so that everyone can enjoy AI services. Intelligent city is the product of the concept of transformation and development under the background of big data in the new era. Its core content is innovation and development, that is, using AI to serve urban development[3]. Intelligent city is a new urban form with intelligent city, precise governance and ecological harmony formed by the integration of new high-tech such as Internet of Things and big data with current urban development[4].

The core of the city is to use AI to make people's lives intelligent, to provide more convenient service modes for people's lives, to improve people's living standards, and to promote the development and progress of the times. The application of AI to intelligent cities not only enhances the competitiveness of cities, but also improves people's living standards and promotes the development and progress of the times[5]. The application of AI in intelligent cities will greatly change human life. Reasonable application of AI can speed up the growth of cities, promote the

progress of human life and achieve a qualitative leap in social economy[6]. The arrival of AI has injected new vitality into social production and development, and also affected people's food, clothing, housing and transportation[7]. Therefore, it is of great significance to explore the application of modern AI in intelligent cities. Based on this, this paper analyzes the practical application of AI in intelligent cities, and puts forward the countermeasures of building intelligent cities with AI as the core.

2. The Formation and Growth of Intelligent Cities and the Emergence of AI

Since the birth of the Internet, it has been popularized at a very high speed, while the network bandwidth has also maintained a high growth rate. Intelligent city is a kind of intelligent city management that uses advanced technology and advanced information methods to analyze many fields such as urban planning, urban transportation, social security, people's living policies, etc., and make quick and timely responses to these fields, thus realizing intelligent and intelligent city management[8]. The basic intellectualization based on big data and cloud computing can make intelligent mobile terminals appear in all areas of urban life and realize intelligent interaction, thus greatly improving the efficiency of urban operation, improving the level of urbanized life and strengthening the construction of urban intelligent ecology.

In the process of building a intelligent city, AI uses data to speak, make decisions, manage and innovate, and data makes AI land. The basic capabilities of AI have been integrated into intelligent government affairs, intelligent transportation, intelligent medical care, intelligent security and other fields of intelligent urban construction. The vigorous growth of digital economy has not only innovated the production relations, but more importantly, promoted the upgrading and transformation of urban industrial chain, thus driving the transformation and innovation of urban industrial form, urban management form and urban service form. It is these changes and innovations that enable cities to transform from industrialization and service to digital industrialization and digital service.

3. Application of Ai in Intelligent City

The growth of AI has gradually become complete and mature, and it has been widely used in many fields. At the same time, these fields have put forward new requirements for AI. In the process of applying AI to build an intelligent city, AI can also be applied to education, tourism, cultural construction and other aspects. It is the internal driving force for the growth of an intelligent city. Only by promoting people's ideal moral quality and cultural level to reach the standard of an intelligent city can we truly build an intelligent city.

3.1 Intelligent Medicine

Intelligence means integrating AI into the medical field, collecting and processing patients' diagnosis and treatment information through all-round intelligent systems, and at the same time, in order to avoid direct contact with patients and stop the spread of viruses, remote visits are adopted for treatment. Under the background of accelerating industrialization and urbanization, integrating and applying AI in the medical field can more effectively protect people's health and life safety, and at the same time, improve the medical level to a certain extent. Medical institutions and health care industry can learn all relevant information of patients through the intelligent medical platform, which can provide convenience and help for patients to receive treatment later and improve work efficiency (see Figure 1).

Fig.1 Intelligent Medical Diagnosis System

Medical institutions can use a variety of intelligent medical devices to remotely diagnose, visit and treat patients[9]. Intelligent alarm device is the most widely used AI in medical and health care industry, which can prevent the deterioration of the disease and get effective assistance in time. Intelligent technology can accurately analyze the patient's condition and provide doctors with accurate treatment directions.

3.2 Intelligent Transportation

With the continuous growth of the city, the number of cars is increasing year by year, which makes the traffic congestion in the city a big problem. The construction of intelligent cities has greatly promoted the development and progress of cities, and the perfect combination of AI and intelligent cities has improved the comprehensive competitiveness of cities. Therefore, the government also pays great attention to them[10]. By using image recognition technology to analyze the road traffic situation in real time, the traffic management department can get the traffic flow information in time, and adjust the signal lights intelligently in time to achieve the purpose of traffic diversion. Intelligent transportation service system can quickly judge and determine the congested and unobstructed sections of urban roads through AI, remind drivers and friends to avoid congested areas, reasonably select unobstructed sections, and divert traffic flow to achieve high-efficiency driving (see Figure 2).
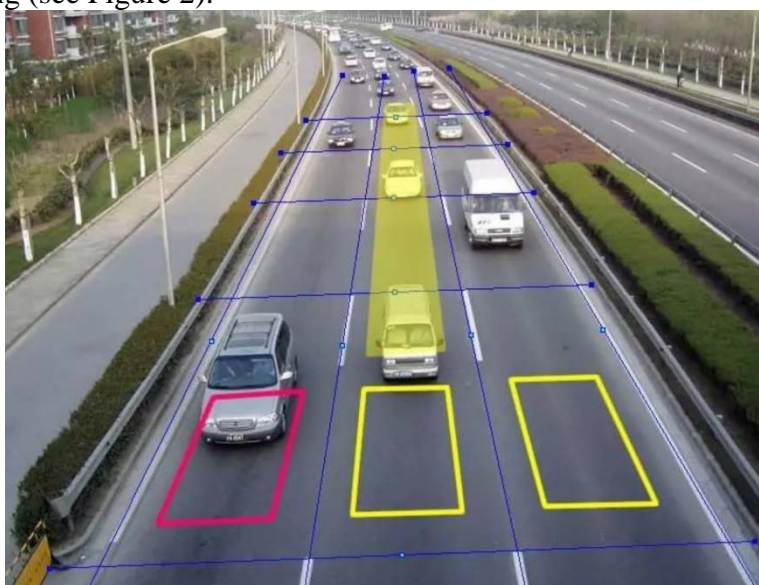

Fig.2 Intelligent Identification of Traffic Conditions

The construction of intelligent cities has obviously improved people's living standards and led people into a new information age. The application of AI in the construction of intelligent cities,

which endows things with intelligence, can achieve accurate governance in all areas of the city, and play a role in assisting leaders in decision-making, solving urban problems and eliminating potential safety hazards. Intelligent maps can use AI to collect road information, make reasonable plans for the route, realize intelligent control of traffic and effectively improve traffic congestion. For some major intersections and major nodes, complete emergency response plans can be formulated to reduce traffic congestion at these locations. Professionals should monitor and test the AI system in real time to prevent potential threats such as out of control, so as to make it better serve human beings.

3.3 Intelligent Security

At present, the monitoring system has been widely used in various fields of urban life, and it has played a very important role for the public security departments to collect information and assist in solving crimes. However, in the face of so many surveillance videos, it is impossible to achieve high-efficiency work level simply by manpower, and the application of AI has solved this problem well. How to effectively use increasingly complex information and data to improve the utilization rate of monitoring information and data is an urgent problem to be solved in the process of construction and growth of today's intelligent cities. Deploy electronic police in key places and entrances and exits of cities, conduct real-time video structured analysis of vehicles and people entering key places through biometric identification and deep learning technology, and give real-time alarm to dangerous vehicles and people (see Figure 3).

Fig.3 Intelligent Security Monitoring

The core of the city is to use AI to make people's lives intelligent, to provide more convenient service modes for people's lives, to improve people's living standards, and to promote the development and progress of the times. The electronic police monitor the passing vehicles in real time, obtain the relevant information of the vehicles through real-time video analysis, and automatically alarm the suspicious vehicles in real time. Through information retrieval, AI can screen out useful information, find useful information in hundreds of thousands of surveillance videos, and quickly help police find clues, so as to lock suspects and solve cases in a short time.

4. Conclusions

Intelligent is the main direction and form of future urban development. AI is the core foundation of a intelligent city, and it is also the core technology that major technology companies focus on. Applying AI to the construction of intelligent cities has become an inevitable trend of the growth of the times. The construction of intelligent cities has obviously improved people's living standards and led people into a new information age. The application of AI in the construction of intelligent cities, which endows things with intelligence, can achieve accurate governance in all areas of the city, and play a role in assisting leaders in decision-making, solving urban problems and eliminating

potential safety hazards. The construction of intelligent cities must also rely on AI systems and platforms. Only in this way can the theme of intelligent cities be intelligent, intensive, energy-saving and green. Intelligent cities with AI as the core technology will eventually completely change all industries and human lifestyles, and greatly promote the growth of human material civilization and spiritual civilization. Through AI, it can promote the management of urban resources, precise governance, intelligent construction of ecological civilization system, improve the living standard and living environment of citizens, and help the high-quality growth of intelligent cities.

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