Research on the Application of Artificial Intelligence in Intelligent City and Its Countermeasures

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Abstract. Intelligent urban governance is an inevitable choice to conform to the development trend of modern science and technology. With the development of digitalization, intelligent cities based on artificial intelligence will accelerate the modernization of urban governance. Based on the connotation and basic of intelligent city, this paper analyzes the application of artificial intelligence in the governance of intelligent city. It puts forward the idea that artificial intelligence will promote intelligent city governance, and holds that intelligent government affairs, intelligent transportation, intelligent medical care and intelligent education will greatly improve the efficiency of resource allocation, so as to realize the modernization of urban governance.

Key words. Artificial intelligence, City governance, Intelligent city.

1. Introduction
The 19th CPC national congress clearly stated that the overall goal of comprehensively deepening reform is to improve and develop the socialist system with Chinese characteristics and modernize the country's governance system and capacity. As the main body of regional development, urban governance modernization is of great strategic significance to the realization of national governance goals. At present, China is in the stage of transformation and development. The rapid urbanization process has brought about a series of urban problems as well as rapid economic growth. The urban system is a complex and huge system, which requires a high level of comprehensive management. Especially today, with the rapid development of technology and people's increasing emphasis on the quality of life, urban governance is becoming more and more difficult. Therefore, it also provides opportunities for the development of artificial intelligence technology, which may bring new solutions to the future city governance. With the new breakthroughs of artificial intelligence technology, more and more cities are integrating artificial intelligence technology into intelligent city construction [1].

2. Connotation and Basic Framework of Intelligent City

2.1. The Connotation of Intelligent City
Intelligent city is the deep integration of scientific and technological innovation and urban development, enabling cities through science and technology and forward-looking urban development concepts. To promote the process of urban intelligentization by means of ecological integration and upgrading, so as to achieve a convenient and convenient life for all, efficient and accurate urban governance, high-quality industrial economy, green and livable resource environment and intelligent and reliable infrastructure. Intelligent city is a new concept, new mode and new form of urban
development that supports the supply-side structural reform of urban services and meets the needs of better urban life [2]. Intelligent city is a new stage of accelerated development of urban intelligence. Intelligent city is an intelligent upgrade on the basis of urban digitization and network development. It is an inevitable stage for a city to move from local wisdom to comprehensive wisdom.

2.2. Basic Architecture of Intelligent City
From the perspective of the development trend of urban governance, it has stepped into the era of intelligence. It should be guided by the needs of citizens and continuously improve the ability of automatic perception and discovery of inter-city problems by utilizing technologies such as big data, artificial intelligence, Internet of things, mobile Internet and cloud computing. It can continuously improve the efficiency of cross-domain complex problem collaborative disposal and expert consultation and consolidate the self-growth and improvement mechanisms of urban governance, explore new models of urban governance, and promote the development of an intelligent society. The establishment of intelligent city is to realize a highly intelligent and coordinated new comprehensive system of urban governance through big data, artificial intelligence, Internet of things, mobile Internet, cloud computing and other technologies. That is to say, Intelligent city is a re-combination of deconstruction, systematization and modeling of the city's own system. It integrates modern cities with big data, artificial intelligence, block chain, 5G and other emerging technologies. It mainly consists of three layers, namely, the facility layer, the platform layer and the application layer. The details are shown in figure 1.

(1) The facility layer is the sum of the city's functional infrastructure and information infrastructure, including infrastructure, talents, system rules, data, underground pipe network, urban architecture and information network, supporting information communication, service delivery and business collaboration.

(2) The platform layer is the core to realize the kinetic energy of the emerging technology to the city. Based on cloud computing, big data, combined with the Internet of things, chain blocks, artificial intelligence of emerging technologies such as digital platform, we can promote the construction of urban infrastructure, improve the intelligence level of infrastructure implementation and support the city [3]. We will promote the application of people-benefiting services, resources and environment, industrial economy, and urban governance, and raise the level of intelligentization of business applications.

(3) The application layer is geared to the needs of three kinds of main body, such as citizens, corporations and government. Through the use of emerging technology integration innovation, we will highlight of multi-source data fusion after comprehensive analysis. Based on large data to customer, artificial intelligence helps us better use main body perception and cognitive city [4]. To provide intelligent services which can better meet customer demand, better found, forecasting, and solve the problem of urban development in different dimensions.
3. The Application of Artificial Intelligence in Intelligent Cities

It can be said that the technical basis of smart city is artificial intelligence. When the integration of urban governance and information technology develops to a certain extent, more and more data from all aspects of the city will be generated, forming a mass of data. The mining and analysis of these mass data by the government, enterprises and social institutions will bring infinite value. How do you mine and analyze this mass of data? Here requires the use of artificial intelligence, can by artificial intelligence to individual, objects and risk cities such as data analysis, and data expression, modeling and animation display, form may experience scenes, traceability of data and information of inventory, for the urban governance decisions and city intelligence services provide visual reference, serving the convenient service, social security, economic development; It can also control and analyze the situation in real time to realize the intelligent management of urban data and provide intelligent services. As shown in figure 1, it is embodied in the following aspects:

3.1. Intelligent Manufacturing

With the gradual expansion of the scope of the industrial Internet, the industrial Internet will eventually break through the boundary of the factory and go to the service terminal -- intelligent city. In other words, the industrial production area and the urban consumption area are connected transparently to realize the "F2C (factory to consumer)" business model. Artificial intelligence will play a crucial role in this industrial chain connecting industry and city, helping to realize intelligent processing and efficient optimization of complex urban supply chain and complex intelligent city system. Using the technical route of "AI+ industrial Internet + city", artificial intelligence can create a large-scale collaborative and personalized customized city and truly realize the consumption upgrading and high-quality development of the city. Products and services will be highly intelligent and pleasant, and the production and service delivery process will be characterized by high quality,
flexibility, intelligence, efficiency and green. The industrial model has undergone revolutionary changes. Smart agriculture, service-oriented manufacturing, production-oriented service industry and intelligent service industry have developed greatly, and the value chains of agriculture, manufacturing industry and service industry have been comprehensively reshaped [5-7].

3.2. Smart E-government
The "Internet + government affairs" emphasized before is actually an upgraded version of e-government. The core concept of "Internet + government affairs" is the government affairs based on mobile Internet.

The first generation of government was built on the Internet. For example, people used computers to connect to government websites to do things.

The second generation of government affairs is built on the mobile Internet, such as using mobile phone apps to access the government system. The second generation has the advantage of increasing user coverage.

The third generation of government affairs can be called intelligent government affairs, which is built on the basis of artificial intelligence, and has three characteristics: first, complex decision-making, that is, it can realize the function of complex decision-making on the basis of big data of the government, and make quick response to hot social issues and potential risks of social public events. Second, intelligent government assistant [8]. Government responsiveness has always been a problem in government affairs due to the limited number and hours of government workers. The third is convergence of intentions. How to further aggregate the public demand of residents into the content of the government's public decision has always been a difficult problem for modern democracy. However, big data analysis and artificial intelligence can solve this problem well. For example, the government can add a module on the platform of WeChat and alipay App to collect people's opinions on a public event. Then a unified analysis of these wishes is conducted through the big data platform, which can be used in the hearing process of municipal facilities, so as to quickly collect public opinions.

3.3. Intelligent Medicine
The development of smart medicine will improve the overall level of urban public health. The biggest problem of public health service is to realize the equalization of medical service. High-quality medical services are available in megacities or the central urban areas of large cities, while it is difficult to achieve them in the fringe areas of large cities or small and medium-sized cities. As intelligent medical treatment is replicable and popularizable, it will change this phenomenon and achieve equalization of medical services [9]. In addition, intelligent medical treatment can also be classified management. Family, community or grass-roots hospitals are mainly used for the prevention and treatment of common diseases among residents, while third-grade hospitals are used to solve difficult diseases. This will greatly improve the efficiency of the use of medical resources. The development of intelligent medical treatment can also effectively strengthen the intelligent prevention and control of epidemic diseases such as COVID-19. Through the investment of advanced technologies such as artificial intelligence, the rapid response ability and prediction ability of the disease control system can be improved, and the big data can become the analytical tool of the disease control system, so as to enhance the ability to nip the outbreak in the bud.

3.4. Intelligent Transportation
In the future, intelligent transportation will get rapid development. With the development of the new generation of information technology, advanced control engineering technology, information technology and sensor technology will be applied to the intelligent transportation, forming a high efficiency, environmental protection, energy saving integrated transportation intelligent system. Traffic management departments can use this system to analyze all kinds of traffic data. According to the decisions provided by the big data management system, effective measures should be taken to develop a more perfect transportation organization plan [10]. Big data system can also provide the public with
more refined travel services, which will play a huge role in transportation resource allocation, intelligent parking. "Internet +" intelligent transportation and other aspects. At the same time, the future development of intelligent transportation will focus on the construction of driverless traffic network. With the development of the future society, the proportion of individuals owning private cars will decrease, and smart taxis and public transportation will become the main tools for people to travel. This could reduce traffic congestion, environmental pollution and parking difficulties.

3.5. Intelligent Education
In the future, education is the field that most needs to be reshaped, and lifelong education is possible. Through artificial intelligence, extension, reality, 5G technology such as communication, block chain collaborative innovation, building intelligent education platform, educatee make use of this platform, through the recommended resources, matching the buddies, custom task, choose the way such as space and time and way, achieve more intelligent contextualized teaching, autonomous learning and individualized learning and experience type teaching, in the home via remote interaction and virtual reality to complete education, implementing lifelong education, which will also become the important form of education in the future. The new generation of information technology will focus on personalized educational activities, and provide support for the cross-temporal allocation of educational resources, multi-subject educational collaborative governance, socialized educational service supply, and intelligent educational management and evaluation.

3.6. Intelligent Security
With the development of modern cities, the importance of social security, financial security, food safety and so on has become prominent. The integration of emerging technologies, such as the Internet of Things, big data, artificial intelligence, blockchain, and 5G, has effectively strengthened the security of these aspects and achieved intelligence. For example, the digital monitoring system can be used to collect and classify the video data in various regions, analyze and process the information centrally and quickly, and strengthen the social security. Through the artificial intelligence can grasp the real-time analysis and sorting of various data, so as to monitor and manage the financial market. Timely discovery of the existing risks, so as to scientific and reasonable planning, for people to develop effective management measures, so as to reduce the risk to a minimum, to maintain financial security. Through the new generation of information technology, the intelligent Internet of Things of food can be formed, and the production and sale of each kind of food can be tracked and analyzed, so as to ensure the food safety of residents to the greatest extent.

4. Suggestions on the Promotion of Urban Intelligent Governance by Artificial Intelligence
In the future, with the degree of urban governance needs wisdom, with the increasing demand, the artificial intelligence in promoting intelligence will play a more important role in urban governance. In particular, after the application of data fusion, the wisdom of the huge amounts of data for city intelligent driver management will become the mainstream of urban governance model, artificial intelligence will also make a real city "super brain". During the application of artificial intelligence engine, the following practices are emphasized:

4.1. Establishing a Correct "Public View" about the Promotion of Artificial Intelligence
In the era of intelligence, the public starts to change from passive participation to active participation, from indirect participation to direct participation, and every individual becomes a copy in the digital world which is a "quasi-code". We should change ideas, the innovation action idea, set up the correct view on "cognitive", namely through ascension departments at all levels of government and government governance concept of artificial intelligence, the artificial intelligence development as a driving force increase management efficiency and level of refinement, formulate corresponding policies and actively at the same time, through the way of the government purchase of public services, encourage the artificial intelligence application in social governance, promote the development of artificial intelligence in the
field of modern urban governance.

4.2. Extensive Use of New Information Infrastructure Fusion Technology

The new information infrastructure composed of the new generation of information technologies such as artificial intelligence, big data, cloud computing and 5G is an organic whole that is interconnected, empowered and promoted. From the perspective of solving practical problems, it should be used as a whole. A single technology cannot solve comprehensive, complex and innovative problems such as urban governance. Therefore, it is necessary to vigorously develop the internal integration of new information infrastructure, enhance the cohesion and coupling degree of technology, establish an open network model of government data sharing based on the sovereign block chain, build the city into a credible open platform for government data sharing, and guarantee the open and safe data sharing among various functional departments of the government. To build an urban public application platform around citizens, enterprises and city managers, especially to ensure the active promotion of big data fusion applications in various fields such as smart medical care, smart education, smart government affairs and smart security. To ensure the integration of urban service resources, provide intelligent services, realize the efficient, accurate, intelligent and green operation of the city, and realize the construction of a whole-process and whole-time livelihood service system.

4.3. Exploring Personalized Intelligence City Governance Schemes

In the future, with the continuous maturity of intelligent technology, the city's network, data and equipment (including urban infrastructure and citizen terminal equipment) will be upgraded intelligently, and the needs of citizens will be more clearly presented to city managers, based on this, the allocation of resources will be more precise and efficient, and the service mode will change from the service mode of passively meeting the demand to the direction of actively analyzing and meeting the potential demand. Therefore, according to the foundation and characteristics of various cities at all levels, personalized intelligent governance schemes can be tailored for urban development. We can adopt resource-oriented smart city governance, eco-oriented smart city governance and digital-oriented smart city governance and other development modes of personality. We have paid more attention to key areas such as smart government, smart education and smart medical care.

5. Conclusion and Prospect

Intelligent urban governance is an inevitable choice to adapt to the development trend of information technology. With the arrival of the digital era, massive multi-source heterogeneous data in a city has become an important resource to understand the status and predict the future of a city. How to use big data and artificial intelligence technology to analyze these data and promote the intellectualization of urban governance which has become an important factor that tests the government's ruling ability and affects the future development of cities. Through the specific application of artificial intelligence in smart cities, it can be found that artificial intelligence is a very effective means of governance. Compared with smart cities, the concept of intelligent city based on "artificial intelligence" will provide new ideas for urban governance. Artificial intelligence will be widely used in smart cities, but also very effectively promote the modernization of urban governance. It can be said that the intelligent city based on "artificial intelligence" will provide a new way of thinking for the modernization of urban governance. In the future, intelligent government affairs, intelligent transportation, intelligent medical care and intelligent education will greatly improve the allocation and use efficiency of urban resources, so as to realize the modernization of urban governance.

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