Application of Artificial Intelligence in the National Games of Shaanxi Province in 2021

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Abstract: In recent years, with the rapid development of digital, information and intelligent artificial intelligence high-tech, it promotes the wide application of artificial intelligence technology in all walks of life, especially the popularization and application of artificial intelligence in sports industry. At the same time, it gives birth to a new concept of Sports - “intelligent education”. For Shaanxi Province, the specific application of artificial intelligence in the National Games of Shaanxi Province in 2021 and the countermeasures and suggestions will bring revolutionary development to the sports cause of our province and promote the development of sports and sports industry.

keywords: Artificial intelligence; Shaanxi province; The 14th National Games; Value and development

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1. The History of Artificial Intelligence and Its Application in Sports

The concept of artificial intelligence (AI) was first proposed by Newell and Simon at a seminar entitled “proposal for a Summer Seminar on Dartmouth artificial intelligence” held by the University of Dartmouth. The application of artificial intelligence in sports has always attracted much attention. For example, the first computer program checkers was written by CS of Manchester University in 1951. In 1997, Google’s AlphaGo “go player” beat chess champion Li Shishi 4:1. On the specific application level, powerful Microsoft, IBM and other companies have applied artificial intelligence to sports through practical application, and constantly promote the rapid and healthy development of intelligent sports. The

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more classic is Watson developed by IBM; the intelligent caddie developed by Microsoft can quickly process golf sports data. Based on the research of these applications, more and more sports events and clubs begin to contact and entrust the artificial intelligence platform developed by satisfi labs and other companies to develop intelligent sports products that meet the market demand.

2. Research Status of Artificial Intelligence

(1) Research status at home and abroad
With the application of artificial intelligence in various industries, more and more people pay close attention to it. As early as the 1970s, when all kinds of intelligent elements were seriously lacking, the United States tried to study the application of artificial intelligence in baseball, but only in the embryonic form. Since then, a series of studies have been carried out around sports in foreign countries. However, due to the limitations of intelligent sports decision-making and the bias of accurate prediction, this application is controversial. In 1995, Lapham scholars put forward the preliminary framework of the application of artificial intelligence in sports competition performance prediction; in 2010, artificial intelligence technology has become stable, and the accuracy of artificial intelligence model test technology for predicting specific games is getting higher and higher. The application research of artificial intelligence in sports has a long history in China. As early as the 1990s, he began to pay attention to intelligent sports. In 1998, Zhang Ruilin interpreted the feasibility and necessity of the application of artificial intelligence in sports field. In 2018, Liu Haoyang proposed the idea of auxiliary training robot, and the application of artificial intelligence in sports field was gradually expanded and generalized. Generally speaking, artificial intelligence has a far-reaching influence and Reform on the sports field, whether it is driven by human subjective consciousness or promoted by the development of artificial intelligence technology.

(2) Development status of artificial intelligence in our province
Artificial intelligence is still in the “weak AI” stage, not fully intelligent. The current situation of artificial intelligence in Shaanxi Province: at the data level, in recent years, the well-known Internet and information technology enterprises in Shaanxi include Huawei, ZTE, etc. Baidu, Ali, Tencent and other companies have also signed strategic cooperation agreements with Shaanxi. As a research and development or content production base in Northwest China, Shaanxi Province has entered a new stage of comprehensive catching up and surpassing. In the algorithm layer, the core creators of their algorithms are AI high-end talents. As of 2018, Shaanxi Province has invested 18000 AI talents, ranking the third in China. This data is true and accurate, and can be found in China artificial intelligence develop-
ment report 2018. With the rapid growth of Shaanxi’s Internet infrastructure construction, Shaanxi will cultivate and attract more AI talents. At the computing power level, the research and development level of domestic GPU chips is limited everywhere. The CPU and GPU are still authorized by the arm company’s hard core, and many technologies can only be redeveloped. However, the people of Huawei in Xi’an are fighting with Chinese people and looking forward to the future CPU. The overall performance has reached a new level.

3. The Application of Artificial Intelligence in the National Games of Shaanxi Province in 2021

(1) Intelligent design of Xi’an Olympic Sports Center, the main venue of the 14th National Games in 2021

The overall design of “Xi’an Olympic Sports Center”, the main venue of the National Games, is fully intelligent design, which is divided into 6 intelligent modules and 63 subsystems. In the design of the main stadium, the most prominent point is the use of panoramic fusion and the leading central monitoring system. Through the panoramic fusion system, the activity scene and details in the venue are fully displayed, and the information identification degree is high, which meets the actual needs; the central monitoring system monitors the abnormal or unexpected situations in real time. In the specific application of artificial intelligence technology, mainly through 5g, Bluetooth positioning, face recognition, LED intelligent lighting, intelligent robot, AR / VR / MR and other technologies, and then through the terminal equipment for online interaction, the masses online and offline watching events, commercial operation inside and outside the venues and surrounding areas, and surrounding events environmental beautification.

(2) Application of 3D holographic projection performance system in the opening ceremony of the National Games of Shaanxi Province in 2021

The 3D holographic projection performance system mainly uses the projection technology to integrate the virtual stage effect and the real-time dynamic performance of the performers in the venue. The audience and online audience can see the amazing 3D effect, which makes people feel immersive. In addition, with the cooperation of the elevator and background screen, the top-level sound effect can even simulate the effect of thinking space. The application of 3D holographic projection performance system in the National Games, which can integrate technology and art, is undoubtedly an innovation in the opening ceremony of Shaanxi games.
(3) Application of face recognition system in the 2021 National Games of Shaanxi Province

The specific application of face recognition in 2021 National Games is mainly through camera technology and human skeleton technology recognition technology. It will collect face data from 91 angles, and can carry out multi angle, variable illumination, occlusion and other on-site environmental impact of face recognition, so as to ensure that when the 2021 National Games of Shaanxi Province is carried out, automatic verification includes athletes, coaches, judges and sponsors, journalists, volunteers and staff of the venue. The faces of the entrants were compared with the photos registered on the ID card in advance to determine the identity of the participants.

(4) Application of intelligent auxiliary training system in the 2021 National Games of Shaanxi Province

The application of intelligent auxiliary training system in the 2021 National Games of Shaanxi Province can optimize the model of athletes’ physiological indexes, further solve the problem between overtraining and effective training, and help athletes formulate more appropriate training parameters, and then use these sports indicators as the evaluation basis of sports training results to analyze whether athletes have the qualification to compete on the field.


(1) Promote intelligence and promote the transformation and upgrading of sports industry

Due to the shortage of funds, lack of consciousness, low level of technology, working environment and other factors, not all sports enterprises can realize the intelligent operation mode, and they are deterred from artificial intelligence. It is suggested that Shaanxi Province should encourage sports enterprises, institutions and scientific research institutes to jointly overcome technical difficulties, encourage enterprises to introduce foreign sports products from Shaanxi, and suggest that the government should take the lead in bridging the gap between local enterprises, scientific research institutes and foreign enterprises, jointly study the key technologies of artificial intelligence application in sports field, produce more intelligent products, and promote win-win cooperation.
(2) Promoting the close combination of artificial intelligence research institutions and sports industry

AI is an integrated and closely integrated field of “production, teaching and research”. In countries with advanced artificial intelligence technology, scientific researchers all work in enterprises. It is suggested to encourage experts from scientific research institutions, academies and other institutions in our province to hold corresponding positions in enterprises, and give professional guidance in key technologies and algorithms of artificial intelligence. Enterprises can also provide technical guidance to sports schools and scientific research institutions, and recommend the current cutting-edge technologies in the market to these units to achieve deep integration and cooperation. The same is the application of artificial intelligence in sports industry.

(3) Strengthen the training of artificial intelligence for sports practitioners, and cultivate their application awareness and information of artificial intelligence

It is the original intention and motive force of AI product design that how to solve all kinds of unexpected situations in the process of on-site competition from the technical point of view. However, for athletes and coaches, the training tasks are arranged every day, and the application products of artificial intelligence in sports field are less understood. Therefore, it is necessary to strengthen the research and development institutions of artificial intelligence sports products cooperate with front-line coaches and athletes, and guide them how to train efficiently through artificial intelligence technology, feel and use the importance of artificial intelligence products for sports development. In addition, for sports product managers, they also need to understand the relevant knowledge of intelligent sports products: product use methods, product regular maintenance and so on, which requires the product provider to provide them with corresponding technical reference.

(4) To formulate the norms and standards for the application of intelligent products in sports, and to safeguard sports fairness, justice and social ethics

In view of the problems of fairness, justice and social ethics involved in the research and development of artificial intelligence application products in the field of sports, norms and standards can be formulated from the following three aspects. 1) Organize experts in artificial intelligence technology and sports field to jointly formulate a national sustainable artificial intelligence sports application standard. 2) Establish an open and transparent artificial intelligence application supervision system in the sports field, and give the written rules to regulate it. 3) Improve the laws, regulations and ethical codes of application of artificial intelligence in sports.
Works Cited


