

Research on the Fusion Trend of Artificial Intelligence and VR Based on Data Mining

Qiong Ren ^a, Junming Chang ^b

Jiangnan University, Wuhan 430056, China.

^a qiongren@jhun.edu.cn, ^b JmChang@163.com.

Abstract: The definition and research background of artificial intelligence, data mining, and VR, and the application of data mining artificial intelligence, such as system design applications and intelligent service applications, are scientifically expounded, which reflects the knowledge economy. In order to further broaden the application scope and efficiency of AI, we should constantly strengthen the application research of data mining in AI. In database knowledge discovery, the interpretation and evaluation of data mining results in an important link.

Keywords: Data mining; Artificial intelligence; VR technology.

1. Introduction

AI is used in social life and production activities, such as people talking with artificial customer service in various mobile phone software; Mechanical manufacturing and production enterprises adopt fully automated production, with artificial intelligence monitoring and production task scheduling. The application of artificial intelligence not only changes lives but also significantly improves the production efficiency of enterprises. With the advent of the Internet era, society is producing a large amount of data daily. By recording and analyzing a large amount of data, people's lives and social development can be more accurately understood.

2. Artificial intelligence

Artificial intelligence is a new science derived from the development of computers. Artificial intelligence is a humanized intelligent machine discipline that takes human beings as the research object. It refers to the scientific machines and related intelligent systems that imitate and learn human intelligence through existing scientific and technological research and improve the efficiency and level of various work by adding human intelligence technology in machine operation. The development of the modern Internet society has produced more data and information. Through data mining and processing, people have accelerated and improved the development of artificial intelligence application technology. With the development of artificial intelligence technology, artificial intelligence has attracted the attention of all countries in the world, and more and more researchers have begun to study how to apply artificial intelligence to all sectors of society. AI development needs the cooperation of sociology, psychology, mechanics, and other disciplines.

The primary purpose of artificial intelligence research is to scientifically design a machine that can imitate and learn human behavior and enable humans to complete complex work through continuous research and development. Early AI research mainly focused on automatic programming, artificial neural network machine learning, and pattern recognition. Early research has established the industry scope for the work and application of AI, and on this basis, AI has a broader

application field. With the gradual improvement of artificial intelligence research in the context of the Internet society, the research findings of artificial intelligence gradually tend to data mining and intelligent decision-making systems. The research on AI has shifted from AI machines to AI-related software and networks. In the Internet era, more and more data have been generated in people's daily life. Data has become an important indicator to guide people's living conditions, working conditions, and future development. Applying data mining to the field of artificial intelligence can broaden the direction of research and application of artificial intelligence.

3. Data mining

Data mining reveals the relationships and patterns in current relevant data by capturing and analyzing data. At present, data research mainly focuses on observing and processing large databases. Using data mining technology in the application of artificial intelligence can strengthen the extraction of relevant data and analyze various factors of social life. Data mining refers to repeated analysis and research on data, cyclic mining of customers' changing needs, transforming the corresponding service mode through changing customers' needs, and improving customers' satisfaction with relevant software and systems.

3.1. Information characteristics and distinguishing data

Among the functional advantages of data mining science and technology, summarizing and classifying data information features is the most basic functional advantage. The so-called summary and division of data information feature mainly refer to the summary and statistics of general features of target data information and online transmission in various forms such as cross tables, multi-dimensional data equations, pie charts, histograms, etc. For example, it can summarize the essential characteristics of a customer; Data differentiation is mainly to compare and analyze the essential characteristics of the target object with those of multiple or one corresponding comparison object, such as customer behavior characteristics and age group. See Figure 1.

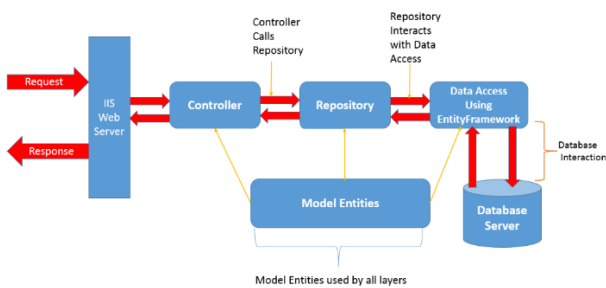


Fig. 1 Logic Diagram of Data Mining Technology

3.2. Relevance

The function of data mining science and technology to analyze relevance is mainly used to explore the information data with relevance in the information base. Sequence patterns and association rules are the two most commonly used technical forms. Relevance rules are mainly used to retrieve different items of relevance in the same practice; the Sequence pattern explores the correlation points between specific events.

3.3. Scientific classification

The scientific classification function in data mining science and technology is currently the most widely used in various industries in China. This function is mainly to establish a classification model system for target object classification to divide and analyze the whole scientifically. To a certain extent, this function in data mining science and technology can fully understand customers' real needs and automatically analyze and sort out customer data information required, forming a distributed database that can freely transmit and present data according to customers' fundamental requirements.

4. Virtual Reality VR

Virtual reality has been recognized as an essential development discipline and a critical technology affecting people's lives in this century. The concept and characteristics of virtual reality technology are still in their infancy. At the same time, due to the software and hardware environment limitations and the different research and application directions, people have a deviation in their understanding of virtual reality technology. In order not to limit its development, experts and scholars have not given a unified definition. Based on all kinds of information and my own experience and understanding, this paper believes that virtual reality technology is an advanced human-computer interaction technology that comprehensively applies all kinds of technologies to create a realistic artificial simulation environment and can effectively simulate various human perception system behaviors in the natural environment. The virtual environment is usually generated and controlled by a computer, which enables users to perceive objects in the virtual environment and contact them through 3D devices of virtual reality to realize human-computer interaction truly. It can be said that there is no difference between the virtual environment and the natural environment. The essential characteristics of the concept called virtual reality in this paper today have been given.

The computer-generated virtual world gives people a feeling of immersive. People can interact or communicate with objects in the virtual world in a very natural way, emphasizing the use of gestures, postures, and other body movements, natural language, and other natural ways of

communication. The virtual environment can enable users to immerse themselves in it and acquire new knowledge, and improve their perceptual and rational knowledge so that users can deepen their concepts and sprout new ideas. Therefore, it can be said that virtual reality can inspire people's creative thinking.

5. Application of data mining in artificial intelligence and VR

Combining data mining and artificial intelligence can promote the development and growth of artificial intelligence. See Figure 2.

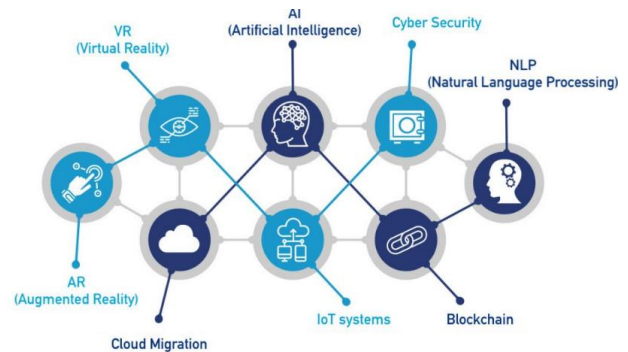


Fig. 2 Application of Data Mining in Artificial Intelligence and VR

5.1. Intelligent service application

The expected result of the combination of human intelligence and data mining applications is an intelligent mobile assistant, which can often search and exchange dialogue information according to individuals, actively recommend relevant products and services suitable for users. The high combination of data mining and artificial intelligence can correctly process and mine the information needed in massive information. It can more quickly solve the difficulties in daily human work. Applying data mining techniques to artificial intelligence can bring the characteristics of network technology to the application of artificial intelligence so that people can enjoy more humanized services while enjoying intelligent services.

5.2. Reflect knowledge economy

The economic benefit of data mining in artificial intelligence is an essential factor in promoting the development of things. The Internet era has made data mining, and development applications receive unprecedented attention. Combining data mining and artificial intelligence can bring huge economic benefits and benefit many industries. The application of artificial intelligence in data mining, agricultural disaster analysis and rescue, military machinery intelligence improvement, and medical machinery intelligence according to the situation. The substantial economic benefits brought by the combination of data mining and artificial intelligence have become the wind vane of social development.

6. The integration trend of AI and VR based on data mining.

6.1. Consumer products tend to be unified from differentiation

The VR all-in-one machine combines the advantages of VR glasses and VR head display to improve the user experience

as much as possible while retaining the portability of the product, significantly improving mobile performance. Compared with the advantages and disadvantages of the three types of VR devices, it can be predicted that with the continuous reduction of hardware costs, VR glasses will eventually be gradually replaced by devices similar to VR all-in-one. However, the user group of VR head displays is mainly limited to device enthusiasts, preferring to use them in fixed places. Therefore, in the future, the form of consumer VR products will eventually develop into VR all-in-one to better match the development trend of the Internet of Everything and meet the entertainment needs of ordinary consumers.

6.2. Further diversification and deepening of application scenarios

The constant innovation of artificial intelligence algorithms, the centralized deployment of large-scale computing, and the ideological guidance of "data for all" provide more options for VR technology to enter all walks of life, especially in the industries that need scene display and human-computer interaction. As far as public services are concerned, the governance of smart cities, autonomous driving, engineering simulation, military exercises, new media publicity, and other aspects will evolve in depth and detail; For personal consumption, AI will help VR better understand people's demands and provide better guidance and new experience in 3D surgery, online education, panoramic film and television, somatosensory games, virtual social networking, and other scenes. It is believed that VR technology will permeate all aspects of life in the future, promoting the continuous development and change of all walks of life.

6.3. The establishment of the ecosystem becomes the sustainable driving force for VR development

Looking at the development mode of many Internet technology companies in the VR field, most have adopted the development mode of "hardware+software+service," in which hardware is just a stepping stone. What can help enterprises to achieve sustainable development in the VR field is the rise and popularity of software services for VR devices and surrounding supporting products. Through the introduction of VR devices, a VR ecological chain is gradually formed, which makes all kinds of interactions depend on VR devices. Therefore, in the early days of the VR wave, building your own VR brand and gradually developing various products based on VR technology to form a closed-loop ecosystem will become a key consideration for technology companies and the mainstream direction of VR industry development.

7. Challenges to be faced by the current integration of AI and VR

7.1. Equipment compatibility needs to be solved urgently

As the starting stage of the new wave of VR, users are overwhelmed by various VR devices. However, in actual use, there is a phenomenon that the hardware and software are incompatible. That is, different manufacturers' hardware cannot communicate with each other, and different content

support platforms have poor support for other manufacturers' equipment. Therefore, if users want to get a good experience, they need to purchase the supporting products of the same manufacturer as much as possible to get the best performance and experience, which virtually increases users' spending, reduces users' enthusiasm for VR, and is not conducive to the standardization and orderly development of the whole market.

7.2. Phantom Realisation of Virtual Bad Content

VR is emerging based on the development of the Internet. While thoroughly enjoying the achievements of Internet development, it also inevitably needs to face the problem of harmful content control. At this stage, the introduction of artificial intelligence technology has led to the display and interaction of virtual pornographic and violent information that violates the requirements of relevant laws and regulations. The long-term exposure of the general public, especially young people, to such harmful information is likely to lead to a loss of tangible reality and even severe moral deficiency and cognitive barriers. In addition, as a large number of applications are accelerating their development towards the unified entertainment and social networking model, VR applications are mostly embedded with instant messaging and group social functions. Considering the higher concealment of VR applications, criminals are more likely to use VR devices to achieve the purpose of series, incitement, or reactionary propaganda. There must be hidden dangers for the stability of the social order that cannot be ignored. Therefore, how to achieve hierarchical and classified governance of illegal applications or illegal content, how to guide the positive application of AI in VR, and how to more effectively create a clear space of network ecology have become essential factors restricting the rapid and healthy development of the VR industry.

7.3. Lack of distribution platform resources

At present, all kinds of resources available for VR devices can be obtained mainly through two ways: one is through the content distribution channel provided by the device manufacturer, but most users need to bear additional costs to obtain more resources, such as games, videos, etc., so this method is applicable mainly to senior VR enthusiasts; Second, download directly from major app stores. Through the inspection of mainstream application stores, it is found that no separate VR application sector has been opened. If users want to obtain VR applications, they can only search through keywords, which is not conducive to promoting and popularizing VR applications. In addition, the typical VR applications at this stage are mainly concentrated in games, film and television, education, and other fields, with high content similarity. Due to technical reasons, users have a poor sense of experience. It is urgent to expand the market further and enhance developers' enthusiasm.

8. Conclusion

Artificial intelligence technology and VR are essential branch technologies in computer science based on data mining, which significantly impact people's daily life and production. They are at the commanding heights of various large companies. The complex combination of crucial points in the integration of artificial intelligence technology and VR of data mining technology, through the connection between

the three and the technical outlook, with the constant maturity of relevant theories and technologies, Artificial intelligence and VR are more widely used.

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