

Public Security Management under the Application of Big Data Technology and Internet of Things

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Abstract: On the basis of analyzing the public security management system under the application of big data technology and Internet, this paper comprehensively and systematically integrates the positive impact of big data technology and Internet of Things on public security management. Big data technology and Internet of Things technology can establish a systematic emergency management platform in public security management. The emergency management platform includes public safety database resources, emergency response system, emergency command system, resource storage, etc.(Cui 2020). Data mining extracts hidden but undiscovered but potentially useful data information from public safety management data sets. Data mining can not only analyze and process the existing safety management information from a large number of fuzzy, random and complex data, but also form a public safety management data information processing system by using these data information. Through the comprehensive analysis and investigation of public safety management system, further improve the quality of public safety management, (Chi 2019).

1 INTRODUCTION

At present, big data technology and Internet technology are widely used in public security management to promote the innovative reform of public security management system. With the improvement and promotion of service function, data mining technology under big data technology has become an important supporting technology for the government's public management decision-making. As people deeply understand the importance of public safety management,(Duan 2018) they began to establish and improve various emergency management platforms and emergency management systems. The biggest problem of establishing emergency management platform is how to solve the problem of information island and unrealistic related problems.,(Guo 2020) Due to the inconsistent construction of emergency management platform, it is not applicable between different platforms, which is easy to produce information blocking.,(Hu 2018) With the continuous development and progress of big data technology and Internet of things, the technical problems of public safety management system are gradually improved. This has laid a good foundation for emergency preparedness. Improve various

emergency sensing systems, emergency communication equipment, resource scheduling systems, etc. at the same time, it can also enable commanders and relevant experts to master the situation and resources of emergencies from a long distance, and more efficiently transmit relevant instructions to corresponding personnel through the Internet emergency command system, (Hu 2016) which is conducive to the scheduling and management decision-making of emergency management resources. Internet of things public security management protocol, as shown in Figure 1.

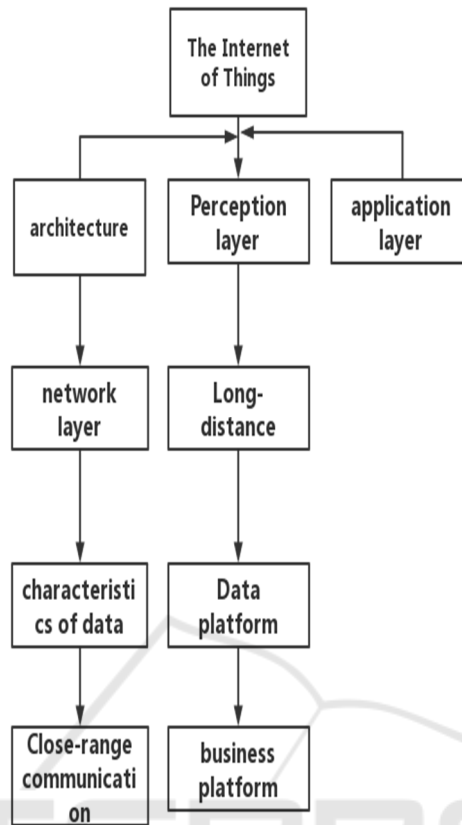


Figure 1: The Internet of Things Public Safety Management Protocol.

2 OPERATION MODE OF DATA MINING IN PUBLIC SAFETY MANAGEMENT

Data mining covers various methods and technologies of public safety management data analysis. Through the multi-dimensional and multi spatial processing of data information, (Hu 2017) it provides a factual basis for public safety management decision-making. In data mining technology, the main purpose is to fully mine all kinds of association information and management information hidden in data information. In public security management, data mining technology can be used to process and analyze various government database information, and extract event data structures related to public security management from massive data. In this way, we can effectively avoid the factors causing public crisis, and make reasonable judgment and decision-making on crisis prevention. Data mining also has a key function. (Jiang) The outlier analysis of the data set and the data expectation of the population have changed significantly. Traditional data mining

methods are designed for association rules, support and confidence, and are usually used for prediction, but these rules are also rules understood by experts. Although the unexpected rules obtained from outlier analysis also have high confidence, (Li 2020) they are often ignored by the public due to their low support, but these rules are often unexpected rules by experts. In the field of public administration, people are more interested in accidentally discovered rules. In the process of analyzing various fraud behaviors, the relationship between normal behaviors and fraud behaviors can be found through independent point analysis, so as to obtain some characteristics of fraud behaviors, provide decision support for managers, and early warning and prevention of various fraud behaviors.

In the emergency prevention stage, data mining technology is mainly used to process and sort out the initial data information. In the process of processing, to determine the authenticity of the information, the deviation analysis method is used to find the outlier data with significant changes in the expected value from the data set. In the crisis management stage, it is very important for senior decision-makers to make

decisions quickly on the basis of scientific crisis information investigation and accurate crisis prediction. The combination of network information mining technology.(Li 2021)case-based reasoning

method and decision tree method provides a new method for decision analysis. The data mining management system is shown in Figure 2.

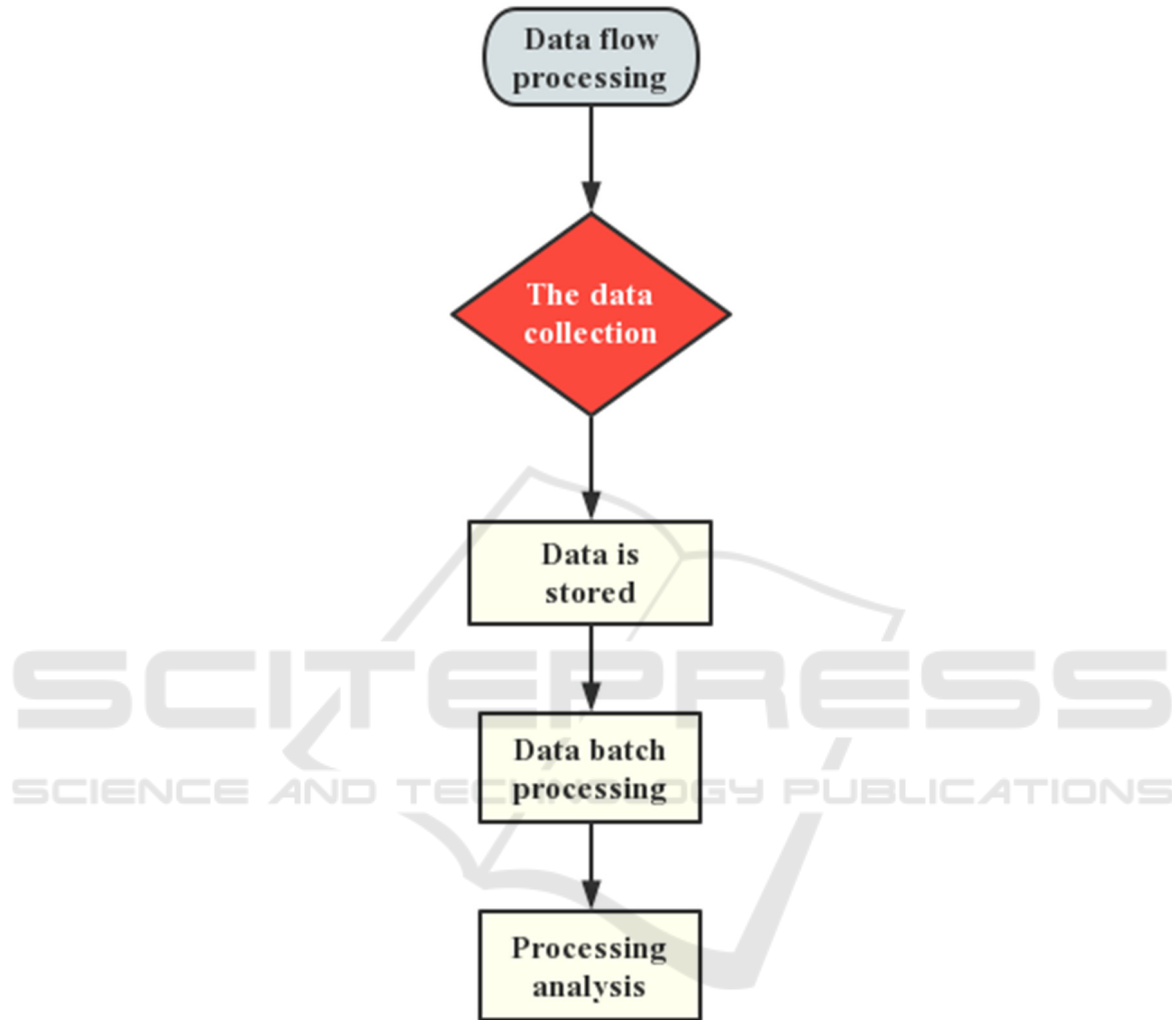


Figure 2: Data mining management system.

Using network information mining evaluation technology and the combination of online mining quantitative analysis and qualitative analysis to select and evaluate resources, improve the integrity of decision-making knowledge and knowledge required for decision-making, and provide basis for scientific decision-making;Decision tree method can analyze and find out valuable rule information to help decision makers make correct decisions.(Li 2015)Case based reasoning can retrieve public safety management cases from the case base, provide solutions and measures for current crisis management problems, and provide choices and references for

decision makers according to previous crisis management experience. After an emergency occurs, (Li 2019) use information data mining technology to find out the causes of the crisis and the crisis handling process, systematically analyze and summarize experiences and lessons, further improve the public safety management system and promote the sound development of the emergency management industry.

3 PURPOSE OF APPLYING DATA MINING TECHNOLOGY IN PUBLIC SAFETY MANAGEMENT

3.1 Social Emergency Management Needs

Emergency events are an important part of public management. For the society, the judgment and decision-making of emergency events not only cause a lot of economic losses, but also cause great turbulence and impact on the society. Therefore, scientific decision-making is the top priority of public safety management. Solving emergencies not only requires huge financial and material resources, but also affects the normal development and operation of social order. In the process of social operation, the environment at home and abroad is becoming more and more complex, so there are more and more factors affecting the decision-making of public safety management. (Ma 2015) At the same time, to ensure

people's normal life needs, we need to use big data technology to deeply mine and analyze the statistical data of emergency events in society. Such as log reports, monitoring systems, social stories, etc. Rapid access to data and information related to public safety management. With the continuous development of economic and social progress, social development and the establishment and improvement of various government databases, cross government data resources are becoming richer and larger, various departments have more and more common requirements for real-time data storage, (Peng 2016) and the government has stronger and stronger requirements for system integration and knowledge updating. The ability to analyze and process the information involved in decision-making lags far behind human resources or traditional data analysis methods. The government must rely on powerful data analysis and processing technology to integrate these massive data resources timely and seamlessly, so that decision makers can make more scientific, reasonable and targeted decisions. The public management emergency system is shown in Figure 3.

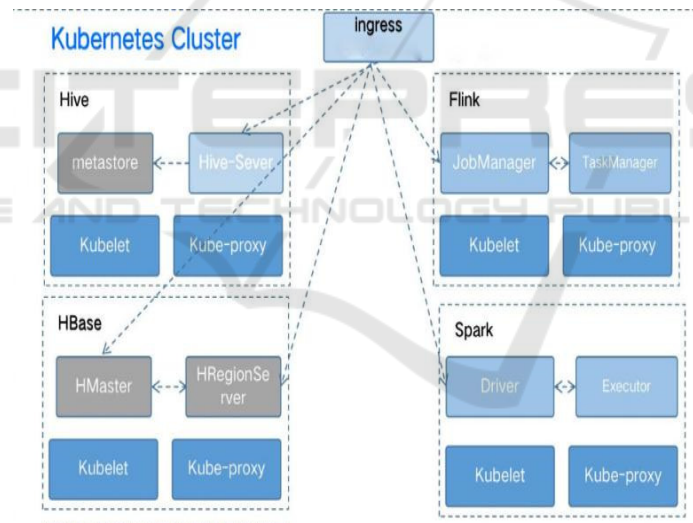


Figure 3: Schematic diagram of the public management emergency system.

3.2 Innovation and Development of Public Management Structure

With the changes of internal structure and external environment, social internal and external coordination and intergovernmental relations have increasingly become a problem that needs to be seriously solved. Information exchange is an important guarantee for smooth government coordination. When society has no consciousness, no mechanism and corresponding information

technology to support information exchange. With the application of information technology in various ministries, government data sources are extensive and scattered. There are significant differences in data formats from different sources, resulting in high redundancy and difficult professional analysis and comparison. (Zhang 2019)



Figure 4: management model.

At the same time, these data sources and storage are not standardized, so it is difficult to draw meaningful conclusions from these different data. Under the influence of these factors, although the government has established an intranet, it has formed a data and information island with departments as units, which is difficult to realize real data and information exchange. How to share these data resources distributed in heterogeneous environments and obtain accurate information in time has become a key factor for the smooth progress of daily governance. At present, we need to rely on a new data analysis and processing technology. With the progress of information technology and the popularization of e-government, national informatization has become an effective way for the government to improve performance and reduce national cost. Government informatization is also the direction of national construction. With the further development of the concept and practice of national computerization, (Zhuo 2017) business processes in many countries have been automated, and even many management processes have been paperless and intelligent. At present, some fields of government

have changed from simple batch processing and online transaction processing to the information analysis era of online analysis and processing, data warehouse and data mining. (Zhong 2016)

4 CONCLUSION

The data information collected by the Internet of things provides a practical basis for the auxiliary decision-making of security mitigation and emergency management. Therefore, the establishment and maintenance of safety data decision-making system should be further strengthened in the future public safety management. At the same time, we should analyze all kinds of public opinion information on the Internet and extract valuable data. The Internet of things can not only quickly perceive the real-time data of risk assessment, but also slow down the assessment speed and save a lot of assessment time. Through data mining technology, we can calculate and analyze the corresponding models of different public opinion events, and according to different emergencies, Formulate the corresponding model algorithm, so that people can quickly get the data results of auxiliary decision-making based on real-time data before and during the event, so as to provide data support and technical support for public safety management. The integration and innovation of big data technology and Internet in public security management provides a new development direction for the reform of public security management and promotes the intellectualization of public security management.

"Application of Mixed Teaching Model Based on OBE Concept in the Teaching of" Professional Public Security Science "under the Background of" Double First-Class " Construction of Jiangxi Police College

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