The Calibration of Inspection Data on Juvenile Theft Cases in 5G Context and IOT Age

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Abstract. In the context of 5g and IOT age, big data has many functions, and the core function of legal big data is to make predictions. However, there is a problem of data transmission errors, and all erroneous data signals cannot be ruled out. This article mainly takes juvenile theft cases as the starting point, and discusses the role of big data in the statistics of legal cases and the possibility of data transmission errors that may occur, and in the context of big data, for juvenile theft. Recidivism rates were studied and practical recommendations were made. Unlike other articles, this article integrates the Internet of Things into judicial issues, aiming to better serve the law through technology.

Keywords: 5G · juvenile theft · IOT

1 Foreword

In the context of 5G, data transmission has low latency, and data transmission is mostly transmitted by serial digital signals. During the transmission process, it is unavoidable that there will be digital changes resulting in signal data errors, so data verification will be performed during serial transmission, it does not necessarily rule out all erroneous data signals, there will be data transmission errors, especially when important data is transmitted, the confidentiality of accuracy is particularly important, so it is a problem that needs to be solved.

In terms of how to correct the inspection data for juvenile theft cases, the China Judicial Big Data Research Institute relies on the judicial trial information resources gathered by the people's court's big data management and service platform to review the trial situation and future progress of cases involving the protection of minors' rights and interests in recent years. The situation of adult crime cases was analyzed and relevant data were released, aiming to provide reference for strengthening the protection of the rights and interests of minors and the prevention of juvenile crime.

In other countries, taking the United States as an example, according to the National Center for Juvenile Justice, the categories of crimes that juvenile courts deal with the

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longest include: simple assault, drug law violations, theft, obstruction of justice, and disorderly conduct. Based on these data, the United States has developed a set of evidence-based practices, an example of which is the early detection program, which can detect juvenile offenders according to this early detection program, and based on the answers from the database with the corresponding, which may lead to higher risk factors for delinquency among juveniles, compared with interventions based on data that have been evaluated and shown to be effective in reducing or preventing crime.

However, there are still some deficiencies in the technology at this stage. For example, in the process of uploading data, there may still be transmission problems due to force majeure factors, resulting in uploading wrong data. How to reduce the data error during the transmission process? How to improve the efficiency and accuracy of data correction? Taking the data transmission correction of juvenile theft cases as the breakthrough point, this paper discusses how to correct the erroneous data in the transmission process more accurately and efficiently, and also studies how to scientifically and effectively prevent the occurrence of juvenile theft cases.

2 Literature Review of Data Correction

"Traditional statistical analysis methods cannot properly handle the relationship between latent variables, while structural equation models can handle both latent variables and explicit indicators" (Qin Zhengqiang, 2017). There are huge loopholes in traditional data statistics, which requires data correction to avoid data errors. "Through the processing and selection of the input data of the neural network, the accuracy of the online application of the neural network method is improved, and the "residual pollution" that occurs during data inspection is avoided, so that the bad values in the measurement data can be correctly detected and located. At the same time, it can correctly reconstruct and estimate bad data" (Si Fengqi, 2002). The bad data self-correction scheme of AANN solves the estimation of bad data temporarily after it is proposed, but there are still some loopholes in the inspection of wrong data. "On the basis of order statistics, a new test statistic is constructed. Using the distribution properties of order statistics, its exact distribution and related properties are deduced, and compared with Dixon-type test statistics" (Zhang Huijuan, 2012). After the abnormal data is tested, how to verify and modify the detected data becomes the next problem to be solved. "Correct data is the key to ensure the accuracy of state estimation results, and the existence of bad data will greatly reduce the credibility of the estimation results" (Li Shan, 2021) In big data statistics, correct data is to ensure the correctness of data statistics The key condition is that the occurrence of wrong and bad data will have a great impact on the correctness of data statistics. "Since the second half of the 20th century, with the continuous popularization of computers, the digital communication method not only improves the communication speed between police officers, but also realizes the transmission of large amounts of data between police officers in the same area. This breakthrough The achievements have also promoted the progress of other technologies based on massive data, such as real-time imaging, biostatistics, database search, and global positioning systems." (Le Bei, Zhong Xin, 2013) Data collection has become a key in modern times. The detection and correction of erroneous data has also become an important technology. "Before the

new data is officially released and used, it needs to be verified to check the correctness, reliability and consistency of the new data set with other data sets." (Zhou Zihan, 2021) For data phones, correct and Error-free data is a key factor in performing analysis and giving correct results, and it is critical for the verification and correction of new data. "Missing data in surveys can cause estimators to be biased. There are some simple and easy ways to adjust the data, which, if used properly, can reduce estimator biases caused by missing data" (Jin Yongjin, 2001) In the statistical process of data, the erroneous data that occurs will affect the accuracy of the situation prediction.

3 Data Correction Issues in Juvenile Theft Cases

3.1 Data Statistics Delay

There is a delay in data statistics in Guangxi. Because the region is relatively underdeveloped, the villages and counties are scattered, the data input is not careful, and the communication and coordination are not timely, which brings certain difficulties to the data collection and causes the delay of the data collection. It is difficult to update the data at the first time, which brings certain difficulties to some tasks. In less developed areas, after a minor theft occurs, the victim may not dare to report the crime due to small losses, fear of trouble and other factors. On the other hand, the victims may not be able to provide detailed case information even if they report the case. For example, in a juvenile theft case that occurred in 2012, two juvenile offenders stole four mobile phones on a crowded pedestrian street and a farmers market. The victim It is impossible to find the trace of the suspect in the dense flow of people, which makes the case difficult to find. At the same time, due to the strong anti-reconnaissance ability of the criminal suspect, there is no valuable trace evidence at the scene, resulting in the case not being valid. It has been proved that the frequent occurrence of cases and the absence of valuable traces of physical evidence at the scene have made the prosecution rate and severe penalty rate low, making it difficult to obtain similar cases in the future due to the lack of network information infrastructure. Effective data support.

At the same time, there will also be exceptions caused by network connection terminals in advanced data protocols and network construction problems, and the disconnection of data during the transmission process may lead to the loss of data in transmission and statistical errors. For example, in the process of data transmission, when the data that needs to be transmitted is converted into binary, there are continuous and sudden errors, which will cause when the receiver receives this data, there is no problem with the verification method. An error occurred in the binary number, causing the receiver to misinterpret the data. And the emergence of failure data, which is a key component of predictive algorithms used to identify warning signs and trigger timely maintenance. Failure data may not exist if maintenance is performed frequently and never fails, or if the system is at a safety-critical level.

3.2 Data Security

My country pays more attention to the protection of the privacy of juvenile offenders in juvenile cases, but in less developed areas, due to the relatively insufficient infrastructure of network information, the transmission of these private information that needs

to be protected may be in the process of transmission. Incorrect data and data errors due to force majeure during data transmission. It is also possible that in the process of data transmission, it will be maliciously attacked by middlemen, thereby stealing, intercepting, forging, and tampering with the data in transit, posing a further threat to the security of judicial data. According to Verizon's statistics on data breaches, nearly 50% of the main reasons for data breaches are due to hacker attacks, and malware hidden in computers also accounts for 50% of data breaches. 30%, and the rest due to improper configuration of technicians or operators, social engineering attacks, privilege abuse, and physical attacks (Fig. 1).

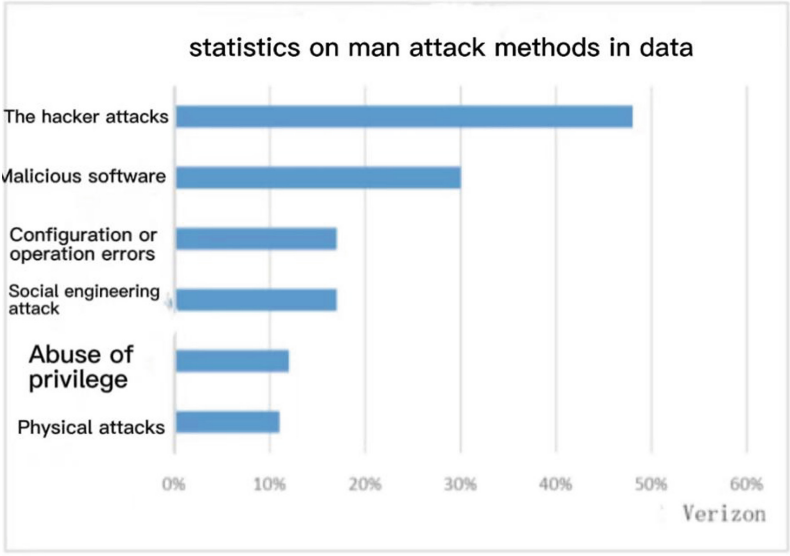

Fig. 1. Main attack methods in data breaches Source: Verizon

3.3 Data Analysis

Today's policy on juvenile offenders is relatively loose, taking into account their young physical and psychological age, so the implementation of arrest or non-arrest will not be arrested, and the prosecution may not be prosecuted. Said, it just increased its wrong understanding, that the crime is not a serious problem, and will commit the crime again. On the one hand, juvenile offenders have a fluke because the punishment they receive is not severe; In such cases, re-offending will occur.

In the process of punishing juvenile delinquents, due to the inconsistency of judicial databases in various places, some law enforcement officers could not find similar punishment cases. Reference and basis. With a unified database, when faced with similar cases, law enforcement officers can make corresponding punishments based on past law enforcement experience, so that a group of juvenile offenders who are subjectively

malignant and difficult to correct feel the law Majesty, reducing the likelihood of them breaking the law again.

4 Data Correction Solutions for Juvenile Theft Cases

Technological innovations are carried out on the confidentiality and accuracy of data transmission to ensure that the data is transmitted to the corresponding database accurately and quickly.

4.1 Technical Level

The data of juvenile delinquency involves the personal information of juvenile delinquents, and my country attaches great importance to the protection of the personal information of minors. We need to consider how to reduce the risk of data theft or loss during transmission, how to deal with establishing and closing connections, and exceptions caused by connection interruptions. Avoid data disconnection during transmission, resulting in data loss. Complete the verification and confirmation of the data, reduce the error retransmission, provide multiple paths, arrange them in sequence, and automatically adjust the timeout value. It is necessary to use the TCP protocol. In the case of interruption of the communication line, TCP reports an error, and the application program re-establishes the connection and transmits the data again. However, in the intermediate transmission process, it is difficult to guarantee whether there is interference from a third party. Therefore, it must be controlled by the protocol of the application layer.

If it is in blocking mode, it must be confirmed by the other party before returning. You can test it as follows. After the connection is established, the physical line is disconnected. The operating system will not immediately know that the physical link is disconnected (such as dialing up), and the program calls send again. If the return fails, it means that send waits for confirmation before returning. If the return is successful, it means that send only needs to send to the local TCP to return.

But if the amount of data is too large, other problems will arise, as follows:

1. If the Nagle algorithm is not enabled, the sender's TCP/IP protocol will execute the sending action.
2. If enabled, whether the sending conditions can be met. Accordingly, it is impossible to judge whether the condition is satisfied.

TCP itself uses a sliding window model, and the use of TCP connections is concerned with handling the establishment and closing of connections, as well as exceptions caused by connection interruptions.

4.2 Data Collection

The deep mining and fusion application of data is a significant feature of big data technology. It can help us make predictions. After years of data accumulation, the people's

courts already have a large amount of judicial statistics. However, there are still problems such as the narrow scope of statistical investigation, insufficient statistical indicators, and slow updating of data and errors. Using this technology, the judicial statistics system can be optimized and refined, and it can help local courts to make reference and comparison in the judgment of related cases, and reduce the problem of excessive or light sentences. At the same time, the data collected from various regions can analyze the reasons of the case, summarize and summarize, break the information island, and provide diversified guarantees for subsequent judicial trials.

When collecting data, ensure its accuracy and authenticity. You can use python to write a script to crawl data in batches, and use the IP pool to prevent blocking, simulate login, crack the verification code, crack the anti-crawling mechanism, parse the picture, etc., and finally process it into a standard format for storage. At the same time, in order to ensure the personal privacy of minors, it is necessary to further encrypt the data. When data is transmitted on the Internet, it may be attacked by man-in-the-middle, thereby intercepting data, falsifying data, and causing four problems of eavesdropping, counterfeiting, tampering, and post-event denial. Using python to write scripts to crawl data in batches, coupled with the IP pool, can protect data security to a certain extent. The core of data security is to ensure the safety and legal and orderly flow of data. Currently, data is a new type of production factor that affects national security. Because juvenile cases involve the protection of the privacy of minors, the personal privacy of juvenile offenders will not be illegally violated due to problems in data transmission. While ensuring data security, it also protects the legitimate rights and interests of juvenile offenders to a certain extent (Fig. 2).

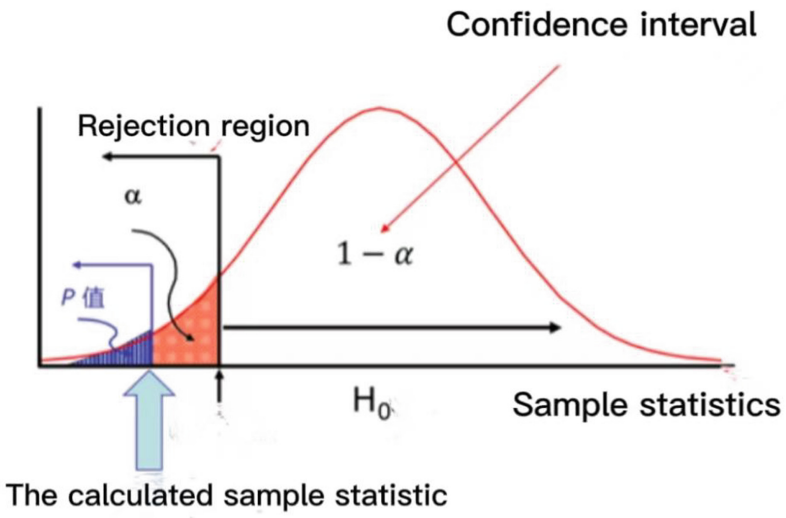

Fig. 2. China Data Research

4.3 Later Protection

Carry out a significance test, make a hypothesis prediction on the overall parameters or overall distribution, use the sample information to judge the rationality of the hypothesis itself, and judge whether there is a significant difference between the data. The collected data can be further tested to provide a certain guarantee for the accuracy of the data. Improve statistical power and increase alpha levels. Using saliency detection, the data is estimated and detected again to avoid data statistics errors due to midway program errors. Carry out prediction test, reflect internal laws, reflect the internal relationship of things, analyze the correlation between two factors, and ensure accuracy. Provide predictive data for follow-up research to help predict in advance and achieve the purpose of prevention.

1. Propose the null and alternative hypotheses

   H 0: _____
   H1: _____

   The alternative hypothesis is corresponding, indicating whether the test data is a two-tailed test or a left one-tailed or right one-tailed test.
2. Construct the test statistic, collect sample data, and calculate the sample observation value of the test statistic.
3. According to the proposed significance level, determine the critical value and rejection domain
4. Calculate the value of the test statistic.
5. Make inspection decisions.

Based on a data sample, compare to a critical value. Check the standard of the value and perform another check (Fig. 3).

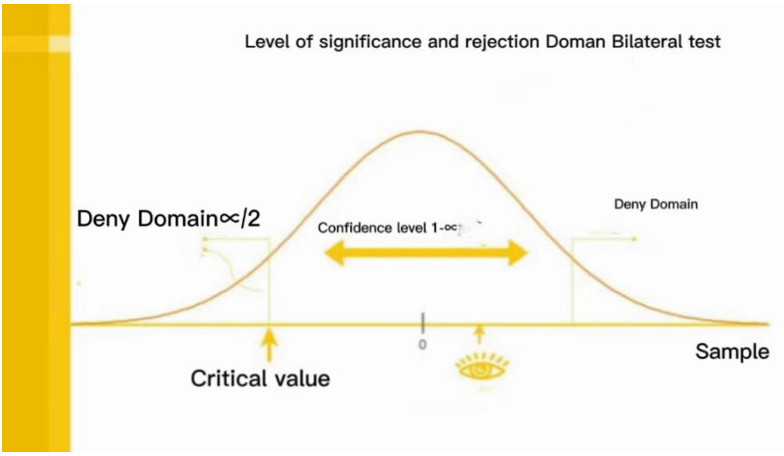

Fig. 3. Two-sided test source: Zhihu

5 Conclusion

Using big data statistics to integrate and analyze various types of cases, provide a solid basis for judgment and punishment for subsequent similar cases, provide a scientific basis for handling and preventing juvenile theft, and improve the problems faced in the process of data transmission. It can correct and estimate the data while ensuring the safe transmission of data. It has practical significance for judging and helping juvenile thieves in the future. Integrating the Internet of Things into judicial issues, providing better legal services through technology, and contributing to the prevention of juvenile crimes.

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