International Journal of Science and Engineering Applications
Volume 11-Issue 12, 275 – 277, 2022, ISSN:- 2319 - 7560
DOI: 10.7753/IJSEA1112.1006

The Integration of Sensitive Data Collection Algorithms in the Virtual Platform of Pediatric Nursing Wisdom Training

Chunyan Wang
Ordos Institute of Technology
Department of Medicine
Nursing Teaching and Research Office
01700,China

Hui Wang
Ordos Institute of Technology
Department of Mathematics and Computer Engineering
Inner Mongolia,017000, China

Abstract:This paper proposes a sensitive data privacy protection "mentor-apprentice" model PATE-T, which provides a robust privacy guarantee for the training data of machine learning models. The eight operations in the pediatric nursing technology, including baby bathing, weight measurement, and baby touching, are arranged in the order of morning nursing for newborns according to the nursing process in the neonatal ward. The Delphi method is used for the preliminary pediatric nursing. The skill teaching evaluation index system table is consulted and demonstrated, and it is used, modified and perfected in the practice of pediatric nursing skills teaching, and finally a set of pediatric nursing skills teaching evaluation index system is initially constructed.

Keywords: Sensitive Data Collection, Virtual Platform, Pediatric Nursing, Wisdom Training

1. INTRODUCTION

In the context of economic globalization, the continuous expansion of medical services and the increasing demand for medicine and medical education make higher nursing education [1] face unprecedented pressure and challenges. Nursing staff not only need to have basic theoretical knowledge and skills, but also have the ability to think critically and analyze problems [2]. Clinical work ability. Vocational nursing education in higher vocational colleges is the main form of nursing education in our country, and it focuses on cultivating advanced practical talents with strong practicality and skills [3]. In order to achieve this training goal, we attach great importance to the experimental teaching link and revise the syllabus of the experimental course [4].

Based on years of pediatric clinical nursing experience, the author selects cases and simulates work scenarios for training; rearranges and integrates the weight measurement method in the general nursing method of "Pediatric Nursing" [5]. With the rapid development of information technology, all walks of life are highly dependent on information System, how to ensure the security of the information system [6], especially how to ensure the security of the data that reflects the core value of the enterprise, has become the most concerned thing for enterprises. Enterprise data contains a lot of user personal privacy information [7], business sensitive data, etc. Machine Learning (ML) is becoming a model service in the cloud computing era. Aggregating multi-party data for machine learning has a lot of practical value. In the process of aggregating multi-party data [8], Data holders do not wish to reveal private information. For example, medical institutions aim to conduct collaborative research through sensitive patient information, and computer users are expected to collaborate without sharing private data [6].

Therefore, privacy guarantees must apply to the worst case: any privacy-preserving strategy to protect the privacy of training [10] data should rigorously assume that attackers have unrestricted access to model internal parameters. In order to achieve reliable protection of sensitive private data, data desensitization technology uses desensitization rules to deform some sensitive information [11]. Differential privacy is a classic data desensitization technology, adding random noise to distort sensitive data [12]. SNMP-based data acquisition engine is an important part of network management system, which is the key to the accuracy and effectiveness of network management [13]. In order to continuously obtain real-time and dynamically changing management data from the managed network elements, the engine usually uses a simple network management protocol [14]. Based on the previous literature research and clinical research, this study uses the Delphi method to study pediatric patients in our hospital. Questionnaires were conducted by clinical and teaching specialists in nursing teaching [15].

The Delphi method is called the expert scoring method or the expert consultation method in our country [16], which is a method of conducting several rounds of consultation with experts to deal with various clinical phenomena and problems and make appropriate nursing decisions [17]. Experimental teaching is an important part of cultivating students' knowledge integration and guiding clinical thinking ability [18]. There are 5 operations including diaper changing method, hip red nursing method and whole body restraint method. After careful design, the teaching content not only reflects the requirements of the syllabus [19], but also emphasizes the establishment of the concept of humanistic care and the concept of disinfection and isolation in the operation, so that the teaching process is coherent and systematic, and it is close to the clinical work scene [20], increased the proportion of experimental class hours, compiled auxiliary teaching materials for experimental teaching, increased experimental equipment, improved the layout of the laboratory, and created a good environment for students' experimental teaching. In recent years, we have continuously [21] explored and improved experimental teaching methods to improve students' clinical nursing skills and adapt to nursing work as soon as possible as the overall

goal of teaching reform. Once it is leaked [22], it will bring huge economic losses to the enterprise, and it will have to bear relevant legal responsibilities and huge fines for violations. Therefore, how to ensure the security of enterprise users' personal privacy information and commercial sensitive data has become the top priority of =enterprise information security work. The global classifier to perform secure multi-party aggregation of local classifiers is the development trend of the distributed privacy protection mode. Researchers have made some breakthroughs in this area, but the classification accuracy and privacy-preserving performance need to be improved.

2. THE PROPOSED METHODOLOGY

2.1 The Sensitive Data Collection Algorithms

This paper adopts the data desensitization technology of differential privacy and proposes a privacy-preserving mentoring model based on transfer learning (PATE-T). By restricting the training data of "apprentices" to "master" votes, and by carefully adding random noise, the highest votes are picked. Use transfer learning to transfer the sensitive "Master" collective knowledge to another non-sensitive data domain to further strengthen privacy protection.

Specifically, the PATE-T model divides sensitive training data into mutually exclusive data subsets, and aggregates the "teacher" trained by these data subsets into a "teacher set". The training data for "students" is restricted to voting in the "teacher set". To ensure the validity of the data, the model includes a "master" model trained on disjoint data subsets, and a "disciple" model that mimics the "master" set Model. Since all masters are trained on disjoint subsets of the dataset, when the number of masters reaches a quorum, the corresponding predictions stem from generalization rather than overfitting to a specific training point. Four arithmetic and logical operations between MBI variables are not supported.

When collecting SNMP data, the results of some basic MBI variables after a certain operation will be more useful for providing management information. The model proposed in this paper not only has strong privacy protection ability, but also has high accuracy. The privacy parameter of the local classifier is $\varepsilon = 0.2$, and a small privacy parameter will bring a strong privacy guarantee. For the standard MNIST dataset, the key to privacy protection is to limit the number of visits of the "apprentice" to the "Master", so that " "Master" can be meaningfully expressed by "apprentice". Traditional machine learning requires the same probability distribution between domains, and the "apprentice" model obtained through traditional machine learning is exposed to sensitive datasets. A large part of the SNMP data collection objects are performance parameters. When the performance parameters exceed the normal value range, it indicates that the network performance is deteriorating and needs to be reported to the network management personnel or other network management application systems in time. Therefore, the SNMP collection system supports the noise value very much. necessary.

2.2 The Pediatric Nursing Wisdom Training

At present, the nursing experimental teaching mode mostly sets the experimental teaching syllabus as a unit. The lack of coherence and integrity between the courses leads to the self-contained system of each experimental course and the division of students' knowledge. The five operations of use method, diaper changing method, buttock red nursing method and whole body restraint method were arranged according to the mode and sequence of morning nursing for infants in the ward of the Children's Hospital. It affects the cultivation of students' thinking ability, innovation ability, comprehensive analysis ability and interpersonal communication ability of "holistic nursing concept".

This method first sorts out the data under its jurisdiction, and performs data classification and classification, and then combines the existing asset exploration management system and 4A system to automatically collect data from application servers, database servers, and operation and maintenance terminals. Through PATE-T The trained "Apprentice" model, on the SVHN→MNIST dataset, "Apprentice" obtains 5000 or 10000 or 15000 training samples, respectively, and the sample labels are labeled by a noisy aggregation mechanism. For the remaining 21032 or 16032 or 11032 samples are evaluated. Look for objective reference indicators for skills teaching. On the basis of the existing research, we can summarize and determine a few indicators that can reflect the skills teaching as the main indicators, and focus on clinical teaching research, and should carry out a large sample of skills teaching research as much as possible.

2.3 The Convergence in the Virtualization Platform of Pediatric Nursing Wisdom Training

In order to protect the privacy in data release, researchers have proposed various methods, such as k-anonymity, which can guarantee that any one record is indistinguishable from another k-1 record, but it lacks randomness. Signaling/DPI system data Including: Mc port XDR, 2/3G signaling plane XDR, 2/3G user plane XDR, LTE signaling plane XDR, LTE user plane XDR, provincial network export XDR, IDC export XDR, provincial network inter-network export XDR, backbone network Internet export XDR, etc.

This internal drive is mostly derived from the tendency to be curious. Presiding over the bedside nursing rounds eliminates the nursing students' dependence on the teacher. Conduct analysis, combine theory with practice, solve the physical and psychological problems of patients, cultivate the ability of independent thinking and problem-solving, and form a preliminary clinical way of thinking.

3. CONCLUSIONS

Aiming at the privacy protection of sensitive training data, this paper proposes a PATE-T model. This method aggregates the knowledge of the "Master" model trained by disjoint data. Teaching is a process in which teachers use teaching skills and strategies to flexibly use teaching methods to complete teaching tasks according to teaching objects. The most important part of nursing course teaching is that students master certain skills and education for the purpose of adapting to the needs of employment positions. Its research results may have a positive effect on the scientific, advanced and practical nature of skills teaching research and in promoting the academic, scientific and clinical development of the skills teaching.

4. ACKNOWLEDGEMENT

2021 Philosophy and Social Science Project of Autonomous Region Research on the Teaching Path of Integrating Ideological and Political Elements into Pediatric Nursing under the background of “Healthy China”

Fund number: ZSZX21302.

5. REFERENCES

[1]Ji Weizhe. Construction of quality monitoring system for public physical education in colleges and universities: Taking Xiamen University of Technology as an example [J]. Quality Education in the West, 2019, 5(9):2.

[2] Wang Weisi. Analysis of the causes and measures of the decline in the quality of public physical education teaching in colleges and universities [J]. Caizhi, 2019(8):1.

[3] Guo Xukun. Realization of Teaching Quality Evaluation System in Physical Education Colleges [J]. Computer Knowledge and Technology: Academic Edition, 2018, 14(7):2.

[4] Chen Hongxin. Research on the construction of teaching quality evaluation mode of public physical education in colleges and universities [J]. Sports Fashion, 2018(4):2.

[5] Tang Yingting, Zhu Qiang, Lu Yang. Experiment of WeChat flipped classroom in public physical education teaching in colleges and universities [J]. New Sports, Sports and Technology, 2022(1):4.

[6] Shi Yi. Construction of a teaching quality evaluation system for public physical education courses in private colleges and universities [J]. 2019.

[7] Gao Wenqiang. Research on the construction and innovation of teaching quality monitoring system for public physical education courses in colleges and universities from the perspective of smart campus construction [J]. Sports, 2018(2):2.

[8] Li Jinggang, Guan Jinghong. Research on the quality evaluation system of "4-year continuous line" of college physical education club based on goal orientation [J]. Sports, 2018(16):2.

[9] Cao Xiuling. Research on the Construction of University Sports Public Service System [C]// The 11th National Sports Science Conference Abstracts Collection. 2019.

[10] Wang Yu. Design of Physical Education Quality Evaluation System in Applied Colleges and Universities [J]. Contemporary Sports Science and Technology, 2021, 11(30):8.

[11] Lin Yuan. Fuzzy comprehensive evaluation method and application of physical education teaching quality [J]. 2021(2013-3):78-81.

[12] Chi Shuo, Zhang Tiemin. Examination and consideration of the "integration of inside and outside the classroom" teaching mode of public physical education in colleges and universities: Taking Jilin Province as an example [J]. Chinese School Physical Education: Higher Education, 2018(9):5.

[13] Guo Xukun. Realization of Teaching Quality Evaluation System in Physical Education Colleges [J]. Computer Knowledge and Technology, 2018, 014(019):64-65.

[14] Bai Guang. Construction of the "Internet +" comprehensive teaching platform for Chinese college students' public sports from the perspective of healthy China [J]. Chinese Journal of Multimedia and Network Teaching (Early Issue), 2019.

[15] Wu Zhenzhen. Research on the application of comprehension teaching method (TGFU) in tennis teaching of public physical education in colleges and universities [D]. Fujian Normal University, 2018.

[16] Wang Junqing. Quality Evaluation of Sports Service Industry Based on Fuzzy Evaluation Method [J]. Business Intelligence, 2018.

[17] Yan Aiping, Wang Tong, Zhu Lin. Research on the construction of a hybrid teaching evaluation system for public sports in colleges and universities in the post-epidemic era [J]. Sports Research and Education, 2021, 36(5):9.

[18] Chai Hua. Research on the application of mobile learning in public sports teaching in colleges and universities—an example of the public sports volleyball class of Inner Mongolia Normal University [J]. Journal of Chifeng University: Natural Science Edition, 2020, 36(10):4.

[19] Han Mengjiao, Hu Shuai. Research on the reform of teaching evaluation of public physical education in ordinary colleges and universities in my country [J]. Boxing and Fighting, 2020(6):2.

[20] Gongjian. Analysis of the effect of applying the progress score evaluation method in public physical education in colleges and universities: Taking Beijing Jiaotong University as an example [J]. Sports Time and Space, 2018, 000(023):84,86.

[21] Fan Yahui, An Ping. Analysis of the application of "monistic training theory" in public sports tennis teaching in colleges and universities [J]. Sports Fashion, 2021(2):3.

[22] Liu Zongwei. Research on the construction of public sports standardization quality management system in colleges and universities [J]. Slam Dunk, 2021(23):2..