

Retraction

Retracted: Mathematical Methods for Sensitive Information Mining Method of News Communication Platform Based on Big Data IOT Analysis

Mathematical Problems in Engineering

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their

agreement or disagreement to this retraction. We have kept a record of any response received.

References

- [1] C. Jiang and Z. Yang, "Mathematical Methods for Sensitive Information Mining Method of News Communication Platform Based on Big Data IOT Analysis," *Mathematical Problems in Engineering*, vol. 2022, Article ID 1606183, 7 pages, 2022.

Research Article

Mathematical Methods for Sensitive Information Mining Method of News Communication Platform Based on Big Data IOT Analysis

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It is urgent to effectively monitor the public opinion of the news communication platform. The platform designed in this paper takes microblog public opinion as the research goal, uses MongoDB to build a distributed computing platform for sensitive information of news communication platform, establishes a corpus of sensitive event topics, introduces PageRank algorithm to deal with microblog social relations, obtains the characteristics of sensitive information of news communication platform, and carries out information screening, so as to accurately screen and mine the keywords in high impact information. To ensure the practical application effect of sensitive information mining method of news communication platform based on big data analysis. Finally, the experiment proves that the sensitive information mining method of news communication platform based on big data analysis has the advantages of high timeliness and high accuracy, which fully meets the research requirements. This is fully in line with the requirements of the study.

1. Introduction

With the popularization of the Internet and the improvement of netizens' sense of social responsibility, the network public opinion broke out a huge vitality that cannot be ignored. It is the public's strong influence and tendentious views on some hot issues in real life. Generally speaking, sensitive information is mainly composed of four parts, which are sensitive words, the related words of sensitive words, the degree of correlation between them and the association rules between them [1]. At present, sensitive information mining technology mainly uses association analysis and cluster analysis to obtain sensitive information related to sensitive words. The application range of correlation analysis technology is relatively wide, and the development speed is fast. Association analysis technology mainly includes two parts: association words and association rules [2]. Clustering analysis technology is mainly to find the text information of related topics, so as to realize the

monitoring of topics and achieve the purpose of topic tracking [3]. For big data analysis, this paper aims to establish a big data platform in which IoT and smart devices can work together to collect the data. Therefore, the final objectives of this paper are to utilize the developed big data communication platform enable quick information collection and real-time feedback, to aggregate and analyze the data collected through repeaters, and to utilize structured databases in the form of big data. The application process of this technology mainly includes three steps. The first step is feature extraction, which mainly refers to filtering the information after the input of information, obtaining the feature vector of the sample, and finally obtaining a matrix; the second step is text clustering, which mainly refers to clustering the results of feature extraction, which can obtain a matrix reflecting all the features in the n-dimensional space. The final step is to select the classification threshold, which mainly refers to the determination of the threshold after the clustering spectrum is obtained, and then the

classification scheme can be directly obtained, in order to ensure the effectiveness of sensitive information mining method based on big data analysis.

2. Sensitive Information Mining Method of News Communication Platform

2.1. Information Filtering Algorithm of News Communication Platform. Network information is complex and diverse, and there are many kinds of good information to serve the public. At the same time, some reactionary, superstitious, violence, and other sensitive information pose a serious threat to social and public security [4]. Therefore, to carry out Internet public opinion information mining requires not only to identify the hot topics concerned by the public from the Internet public opinion information, but also to analyze whether the public's attitude towards an event is positive or negative. In addition, deep-seated public opinion information mining requires good control of negative information dissemination, timely discovery, and disposal of sensitive information, in order to prevent it from causing serious harm to the government, enterprises, individuals, and so on [5]. In the process of traditional topic detection, to judge the similarity between a report and a topic, we need to calculate the similarity between the report and each report in the topic cluster. When the size of topic cluster is large, the number of comparisons will increase exponentially, which will affect the processing speed [6]. To solve this problem, the center vector is used to represent a topic. At this time, we only need to calculate the similarity with the center vector, which improves the effectiveness of topic discovery.

By analyzing the public opinion information such as network news and forum posts, the existing forms and the structural characteristics of network text information, this paper puts forward the idea of "text reconstruction", that is to say, the representative information of the topic is gathered together to form a "theme block", and the remaining part forms a "content block". News headlines contain a lot of classified information, which can let the public know the basic situation of the event in the briefest prompt and evaluation, and guide the public to further read [7]. It is a high generalization of the content of the web page, and has a high accuracy when used to classify news web pages [8]. Topic is the supporting point of Title Construction, and the title of the core event under the same topic is the same or similar to that of its related follow-up reports. Title Information has significant ability to distinguish topics in topic detection, but with the continuous development and change of events, the topic center drifts, and the titles of subsequent reports also change.

The first paragraph of the news web page is a supplement to the title, which is a general description of the event, including the time, place, event, which people or units are involved and so on. It makes a great contribution to the classification [9]. "Universal" emphasizes the statistical characteristics of public opinion information, a single web page cannot be regarded as public opinion, many web pages about a topic and the participation of many Internet users can become network public opinion information [10, 11]. In

this sense, network public opinion is accompanied by many news pages, BBS/forums, blog, many netizens browse or comment on a certain topic. We can say that the topic spread by multiple media and concerned by multiple netizens is a hot topic.

2.1.1. Construction of Sensitive Information Database of News Communication Platform. From the header of the file i record, you can find the first attribute address in the file i record body, followed by two flag words (flags), where the first bit represents the file deletion flag, and the second bit represents the directory 1 division flag (normal directory). When reading the disk information, make a suitable way to read the information according to the two flag bits. If it is a normal file or directory, continue the following reading operation [12]. Otherwise, you need to recover the file first, and then filter the recovered file to get the required file information, and then hand it to the following text information extraction module for processing.

As can be seen from the figure, a file may contain multiple attributes. A complete file needs all the attributes in the file records to be combined according to certain rules. Therefore, when reading the disk file information, all the attributes in the file records need to be read into the memory according to the order in the file records [13]. Each attribute has its specific content, that is, the operation of each attribute is different. The serial number of the file i recorded in the main file table NFT starts with 0, and the files i recorded from 0 to 16 belong to platform files, or metafiles, which are mainly used to store the metadata of the platform. These metafiles are transparent to users and are hidden files [14]. The difference between 16 files and other files and directories is that they have a unique fixed address in the MFT table, while other files and directories can be stored anywhere in the table.

The content part starts with the attribute name, and then defines whether the attribute is resident or nonresident. If it is the former, then the attribute value is the content of the attribute; conversely, if it is a nonresident attribute, then the flow of the attribute will be stored in one or more runs. For the sake of simplicity, the storage running area is continuous on the logical cluster number [15]. A run table is stored after the file attribute name, through which the run date table can access the run table belonging to the attribute. The purpose is to calculate the similarity between the text information extracted from the new web page and the existing text cluster, and taking into account the life cycle of public opinion information; its importance decreases with the loss of time [16]. That is to say, the same keyword in different time intervals is likely to represent different meanings, so we add the calculation of time interval [17, 18]. For example, after the new text information is calculated in the time interval, the smaller the similarity value is, the higher the possibility that it is a new event is, and the higher the score is. The expression is shown in formula (1):

$$\text{score}(x) = \max TT_{(t)} \left\{ \left(1 - \frac{k}{m} \right) \times \text{sim}(\vec{x}, \vec{c}_1) \right\}. \quad (1)$$

In the formula, \vec{x} is the new file information, \vec{c}_1 is the first cluster in the time interval, i is the number of files in the time interval, and k is the number of files added between the latest file collection time in cluster \vec{c}_1 and the arrival time of the new file \vec{x} . In the case of setting the closed value, as long as the score is greater than the set value, the new file is considered to be a new topic. Based on this, the data processing steps of the news communication platform are optimized as follows in Figure 1:

The design of network public opinion monitoring platform mainly includes three modules: text preprocessing module, sensitive information analysis module, and public opinion analysis module. The text preprocessing module mainly includes two steps: Chinese word segmentation and information filtering. Among them, Chinese word segmentation mainly transforms the irregular key text obtained by the platform to form a sensitive word set, and then further processes the word set to obtain the corresponding associated word set. When using word segmentation tools for word segmentation, its speed is relatively fast, and has high efficiency. After inputting the original text information, through the process of Chinese word segmentation, filtering meaningless words, calculating word frequency, scoring feature items and so on, the feature vector of the sample is finally obtained, and the final output of this step is a matrix. Whether the feature selection is good or bad will greatly affect the later analysis. Through text clustering, we can get the distance between these sample points which can reflect the n -dimensional space. The output result of clustering algorithm operation is a clustering pedigree graph, which can generally reflect all the classification situations, or directly give a specific classification scheme, including a total of several categories, the specific sample points in each cluster, etc. After getting the cluster pedigree, we need to choose the appropriate threshold. After determining the ill value, the platform can directly see the classification scheme through the existing clustering pedigree.

2.1.2. Realization of Sensitive Information Mining in News Communication Platform. Propensity analysis of network public opinion is essentially to distinguish the network text information and determine whether it belongs to the positive category or the negative category. The main process of classifier construction is to use the word sequence check suffix tree representation model to calculate, get the similarity calculation results in the feature space, and use support vector machine algorithm to find the optimal classification hyperplane, so as to achieve the purpose of accurate judgment of network information public opinion tendency. Different from structured data, there are polysemy and polysemy in Chinese [19, 20]. At the same time, the context understanding of sentences brings challenges to public opinion information monitoring, which needs the support of corresponding natural language processing technology.

The network public opinion monitoring based on the network information extraction and semantic analysis technology cannot understand the deeper semantics, can only stay in the stage of passive monitoring of network

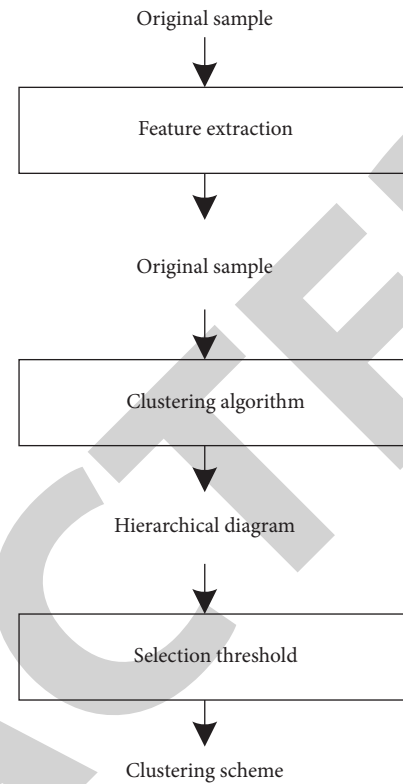


FIGURE 1: Optimization of data processing steps of news communication platform.

public opinion, and cannot realize the automatic identification of network hot spot information, or track the discovered public opinion information. With the development of natural language processing, data mining and other technologies, especially the wide application of search engine, we can efficiently organize the originally scattered information together through the analysis of its relevance [21, 22]. Build a sensitive information knowledge thesaurus, through the analysis of users' concerns about sensitive words, for the detection documents, infer the relationship of sensitive information in the knowledge base, determine the query conditions of sensitive words, submit to the search engine, build the basic analysis set, carry out sensitivity analysis, get the sensitivity evaluation of sensitive words, and issue early warning according to the analysis results. Through the analysis of Web usage records, web structure information and web content information, some quantitative indexes of public opinion are given for decision makers to use, as shown in Table 1.

The basic task of information collection layer is to collect the rich and various public opinion information from the web pages with various data formats. It provides the required data for the public opinion information mining layer, and is the premise of public opinion deep mining. It is the main task of the Internet public opinion information mining layer to carry out in-depth mining of public opinion information, find the hot issues of public concern, analyze the attitude of the public, and deal with the sensitive information that constitutes harm. By analyzing the data provided by the

TABLE 1: Evaluation index system of Internet public opinion.

Class a	Second level	Level 3
Dynamic changes of public opinion	Information variability	Total number of information items under topic Information growth rate under topic Initial item information release time Last update time of item information Aging parameters
	Timeliness index	Signature of information
	Signature degree	Measurement of publisher influence
	Publisher influence	The change of flow and distribution characteristics of information in time
	Diffusivity	
Public opinion information mining	Network distribution	
	Attention	Change of published papers Review changes Response change
	Content sensitivity	Over sensitive information results
	Attitude tendentiousness	Propensity analysis results

public opinion information collection layer, it can detect network topics, analyze people's attitudes, monitor network-sensitive information, evaluate public opinion situation, etc., and provide objective basis for the public opinion information service layer to serve relevant departments.

The sensitive information analysis module mainly includes three ways, namely, association analysis, cluster analysis, and feature extraction. Among them, the common algorithm of association rule mining is Apriori algorithm. The application of this algorithm must first form all frequent item sets, and then form all credible association rules from these frequent item sets. The most important feature of this algorithm is to start from the single item, and then filter it layer by layer, so as to get an effective item set, effectively avoiding the search for impossible items. The public opinion analysis module mainly provides two functions, which are the discovery of public opinion hot spots and the tracking of network public opinion topics. Among them, the application of hot spot discovery can let users know the current hot topics in time, and comprehensively grasp the current network public opinion information. In the process of hot spot discovery, the public opinion monitoring platform mainly obtains information, frequently searched words, browsed web pages, forum replies, and other relevant information based on the keywords entered by users, then monitors the hot spots, and automatically identifies the "hot spot" information in the network, thus forming hot spot alarm [23–25]. Topic tracking in public opinion monitoring platform is mainly realized by topic tracking method, which mainly forms tracking expression expressed by query vector from training set, and then uses this tracking expression to judge the newly captured web page information, and finally obtains the information related to the current topic [26, 27].

3. Experimental Analysis

If the threshold is set too low, it will lead to the separation of reports on the same topic. If the threshold is set too high, it will make the topic larger and introduce a lot of irrelevant reports. In the research of Chinese text orientation analysis, there is no open corpus at present <https://www.drip.com> 16000 comments were collected as experimental data, and

emotion categories of the text were manually labeled, including 8000 positive category documents and 8000 negative category documents. A total of 9804 documents are divided into 20 categories. Among them, there are no more than 100 documents in 11 categories such as literature and education, and more than 1000 documents in 6 categories such as computer, environment, agriculture, economy, politics, and sports. Because the training process of genetic algorithm needs a large number of samples, we only select 6 categories with more than 1000 documents. At the same time, because the algorithm will eventually be applied to information filtering, the project team collected 276 and 192 documents of violence and pornography, respectively. As a result, there are 7947 documents in 8 categories. The distribution of training documents is shown in Table 2:

In order to set a reasonable threshold, ten experiments were carried out. In each experiment, firstly, 10 reports were randomly selected from 8 topics in data set 1 to form the original report set; secondly, the reports corresponding to the original report set were selected from data set 2 to form the reconstructed report set; Then, each report in the original report set and the theme block of each report in the reconstructed report set are segmented, feature selected, and weighted, and each topic in the two report sets is represented as a central vector; Finally, cosine similarity is used to calculate the similarity of each report to its topic and other topics in the report set. This experiment uses eight topics to measure the performance of traditional single-pass clustering algorithm and hierarchical topic detection algorithm in topic detection. The experiments were conducted five times and the performance was evaluated by the cost of testing. Through the average measurement of five experiments, the two methods can identify the topic well under the similar threshold settings of different topics, but the detection costs are different, and the change curve is shown in Figure 2.

It can be seen from the figure that when the topic threshold is given, the detection cost of hierarchical topic detection algorithm is lower than that of traditional single-pass topic detection algorithm, which indicates that the former has better topic detection ability. With the different topic similarity threshold setting, the detection cost

TABLE 2: Sample distribution of training data.

Category	Violence	Pornographic	Computer	Environmental science	Agriculture	Economics	Politics	Sports
Number of documents	276	192	1358	1218	1022	1601	1026	1254

fluctuates up and down. When the topic similarity threshold rises from 0.24 to 0.30, the detection cost decreases. When the topic similarity threshold is greater than 0.30, the false detection rate changes to miss detection trend, and the detection rate is improved. Therefore, when the similarity threshold is 0.30, the detection cost is the least and the topic detection performance is the best. In the experiment, the topic threshold BR is set as 0.30, and the subtopic threshold value is in the range of 0.4 to 0.6. A hierarchical subject detection algorithm is used to test the subject. This method detects the topic and identifies five subtopics, and detects the same number of subtopic reports as the manual identification reports, as shown in Figure 3.

By comparing the detection results of similarity mining effect of sensitive information, we can know the discovery that the number of reports of subtopics identified by the hierarchical topic detection algorithm is roughly the same as that of manually annotated subtopics, indicating that the method can distinguish molecular topics and present the hierarchical structure of topics to a certain extent and the accuracy of the proposed method in each category of test data 1.

Through analysis, we can find that there are some similarities between the two categories with poor classification effect. For example, the political category often contains economic, environmental, agricultural, and other factors, resulting in the low accuracy. In the above experimental data in Table 3, the improved calculation method can achieve better results. However, we cannot rule out that the above experimental results are obtained on the basis of data 1, and there may be some overfitting problems. Therefore, the above second set of test data is used for further test, and the analysis data are as follows:

Among the above experimental data, in terms of accuracy in Table 4, although the computer finance and closed test have a slight decline, there is little difference, while the sports class has a big gap. After analyzing the training documents and test documents, we can find that the sports-related documents in the original training documents belong to sports theory research, while the test documents come from the network, so there is a big difference between the distance. In view of the purpose of the research which is to apply to content-based information filtering, this experiment is designed to apply the above classifier to the test experiment of network-sensitive information filtering. In the experiment, test data 1 is divided into two categories, legal documents and illegal documents. The illegal documents are composed of pornographic and violent documents in test data 1, while the legal documents are randomly selected from the other six categories. The experimental data composition and test results are as follows.

In the experimental data shown in Table 5, in the two numbers before and after each table item, the former one

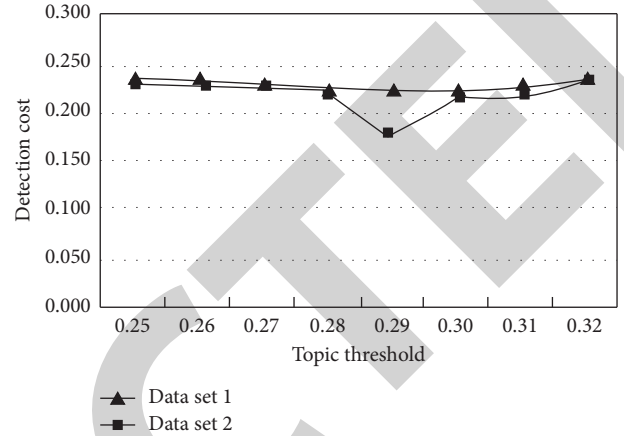


FIGURE 2: Threshold detection of sensitive information similarity mining.

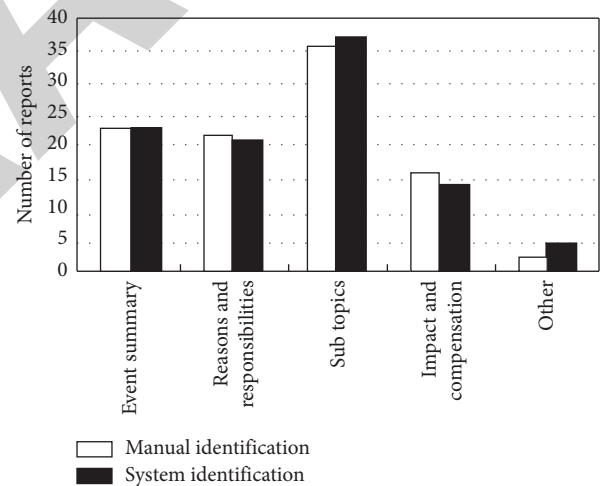


FIGURE 3: Contrast detection of similarity mining effect of sensitive information.

uses the template generation method based on dynamic genetic algorithm to generate the template, but does not use the weight calculation method in this paper to calculate the filtering effect of the filtered information. The latter one uses both the template generation method based on dynamic genetic algorithm and the template generation method based on this paper. The weight calculation method calculates the filtering effect of the filtered information. Simultaneously interpreting the data in the above table with traditional methods, the proposed method is obviously better than the traditional method in terms of the accuracy of illegal information. Because the test data used by traditional methods are completely consistent, the proposed method has better filtering effect.

TABLE 3: Accuracy of sensitive information processing.

Category	Agriculture	Politics	Sports	Violence
Accuracy	79.969/82.324	74.364/76.549	75.211/81.622	96.053/96.385
Category	Environmental science	Economics	Computer	Pornographic
Accuracy	83.345/87.936	91.585/91.762	87.468/91.763	98.446/99.045

TABLE 4: Comparison of data mining accuracy.

	Sports	Economics	Computer
Accuracy	46.154/56.672	90.697/91.387	84.314/88.946

TABLE 5: Statistics of sensitive information filtering effect test.

	Number of documents	Effective filtering	Accuracy
Illegal	300	293/295	97.67/ 98.33
Legitimate	300	261/277	87.00/ 92.33

4. Conclusions

With the increase of the number of network users, the network environment has become more complex. Therefore, the establishment of network public opinion monitoring platform is particularly important. On the basis of sensitive information mining, relevant key technologies are studied, and the design method of network public opinion monitoring platform is proposed to effectively realize the network public opinion monitoring, realize the maintenance of social stability, and promote government departments to make decisions more democratic and scientific.

Data Availability

The data used to support the findings of the study can be obtained from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

References

- [1] Y. Zhang, Q. Ma, Y. Y. Chiang et al., "Extracting geographic features from the Internet: a geographic information mining framework," *Knowledge-Based Systems*, vol. 174, no. 15, pp. 57–72, 2019.
- [2] J. Li, S. Liu, Z. Wang, and J Guo, "Neutrosophy theory based visualization report of sports news data[J]," *International Journal of Electrical Engineering Education*, vol. 7, no. 28, pp. 125–132, 2020.
- [3] Y. P. Singh and P. Gautam, "Development of data mining algorithm for giving the loan in banks introduction[J]," *High Technology Letters*, vol. 27, no. 1, pp. 284–295, 2021.
- [4] Z. Thomas, "Enriching metadata in an international agroforestry research repository with funding-related information by mining grey literature - ScienceDirect[J]," *Procedia Computer Science*, vol. 146, no. 10, pp. 112–122, 2019.
- [5] A. Subahi and G. . Theodorakopoulos, "Detecting IoT user behavior and sensitive information in encrypted IoT-app traffic," *Sensors*, vol. 19, no. 21, pp. 4777–4778, 2019.
- [6] S. S. D. Mitchell, "'Warning! You're entering a sick zone': the construction of risk and privacy implications of disease tracking apps[J]," *Online Information Review*, vol. 43, no. 6, pp. 1046–1062, 2019.
- [7] Z. Li and J. Wang, "Security storage of sensitive information in cloud computing data center[J]," *International Journal of Performability Engineering*, vol. 15, no. 3, pp. 1023–1032, 2019.
- [8] X. Lu, L. Cao, and X. Du, "Dynamic control method for tenants' sensitive information flow based on virtual boundary recognition," *IEEE Access*, vol. 8, no. 10, pp. 162548–162568, 2020.
- [9] M. J. Y. Suh, H. J. Yi, H. J. Kim, and S. H. Kim, "Is asymmetric hearing loss a risk factor for vestibular dysfunction? Lesson from big data analysis based on the Korean national health and nutrition survey[J]," *Otology & Neurotology*, vol. 40, no. 10, pp. 1339–1345, 2019.
- [10] M. Tolani, S. R. K. Sunny, and R. K Singh, "Lifetime improvement of wireless sensor network by information sensitive aggregation method for railway condition monitoring," *Ad Hoc Networks*, vol. 87, no. 11, pp. 128–145, 2019.
- [11] B. Buddhadev, P. Faruki, M. S. Gaur, S. Kharche, and A Zemmari, "FloVasion: towards detection of non-sensitive variable based evasive information-flow in android apps," *IETE Journal of Research*, vol. 35, no. 2, pp. 1–15, 2020.
- [12] K. Nagaraj, S. Gs, and A. Sridhar, "Encrypting and preserving sensitive attributes in customer churn data using novel dragonfly based pseudonymizer approach," *Information*, vol. 10, no. 9, p. 274, 2019.
- [13] M. Barika, S. Garg, A. Y. Zomaya, L. Wang, A. V. Moorsel, and R. Ranjan, "Orchestrating big data analysis workflows in the cloud: research challenges, survey, and future directions [J]," *ACM Computing Surveys*, vol. 52, no. 5, pp. 1–41, 2020.
- [14] G. Hong, "The development and application of new media technology in news communication industry[J]," *International Journal of Electrical Engineering Education*, vol. 2, no. 24, pp. 64–80, 2021.
- [15] S Jesus, C Jenny, V. V Jesus, R Ligia, S Darwin, and F Claudia, "Preservation of confidential information privacy and association rule hiding for data mining: a bibliometric review - ScienceDirect[J]," *Procedia Computer Science*, vol. 151, no. 5, pp. 1219–1224, 2019.
- [16] N. Kumar, G. Akangire, B. Sullivan, K. Fairchild, and V Sampath, "Continuous vital sign analysis for predicting and preventing neonatal diseases in the twenty-first century: big data to the forefront," *Pediatric Research*, vol. 87, no. 2, pp. 210–220, 2019.
- [17] M. B. Alazzam, F. Alassery, and A. Almulih, "Diagnosis of melanoma using deep learning," *Mathematical Problems in Engineering*, vol. 2021, pp. 1–9, Article ID 1423605, 2021.
- [18] M. Goncalves Pinho and F. A. Braganam, "Psychotic disorders hospitalizations associated with cannabis abuse or dependence: a nationwide big data analysis[J]," *International*

- Journal of Methods in Psychiatric Research*, vol. 29, no. 1, pp. 59–63, 2020.
- [19] P. D. Samolis, D. Langley, B. M. O'Reilly et al., "Label-free imaging of fibroblast membrane interfaces and protein signatures with vibrational infrared photothermal and phase signals," *Biomedical Optics Express*, vol. 12, no. 1, p. 303, 2021.
- [20] A. Urbán, A. Groniewsky, M. Maly, V. Jozsa, and J Jedelsky, "Application of big data analysis technique on high-velocity airblast atomization: searching for optimum probability density function," *Fuel*, vol. 273, no. 2, pp. 117792–118124, 2020.
- [21] A. F. Ujuagu, Z. Wang, and S. I. Morita, "Automatic background removal and correction of systematic error caused by noise expecting bio-Raman big data analysis[J]," *Analytical Sciences*, vol. 36, no. 5, pp. 45–49, 2020.
- [22] D Fnyes, B. Nmeth, and P. Gspr, "Design of LPV control for autonomous vehicles using the contributions of big data analysis[J]," *International Journal of Control*, vol. 45, no. 12, pp. 1–23, 2021.
- [23] M. N. Hossen, V. Panneerselvam, D. Koundal, K. Ahmed, F. M. Bui, and S. M. Ibrahim, "Federated machine learning for detection of skin diseases and enhancement of internet of medical things (IoMT) security," *IEEE journal of biomedical and health informatics*, p. 1, 2022.
- [24] D. Koundal, "Texture-based image segmentation using neutrosophic clustering," *IET Image Processing*, vol. 11, no. 8, pp. 640–645, 2017.
- [25] R. F. Mansour, S. Abdel-Khalek, I. Hilali-Jaghdam, J. Nebhen, W. Cho, and G. P. Joshi, "An intelligent outlier detection with machine learning empowered big data analytics for mobile edge computing," *Cluster Computing*, pp. 1–13, 2021.
- [26] M. B. Alazzam, A. A. Hamad, and A. S. AlGhamdi, "Dynamic mathematical models' system and synchronization," *Mathematical Problems in Engineering*, vol. 2021, pp. 1–7, Article ID 6842071, 2021.
- [27] F. Abukhodair, W. Alsaggaf, A. T. Jamal, S. Abdel-Khalek, and R. F. Mansour, "An intelligent Metaheuristic binary pigeon optimization-based feature selection and big data classification in a MapReduce environment," *Mathematics*, vol. 9, no. 20, p. 2627, 2021.