Research Article

Research on Physical Health Monitoring and Management of University Students Based on Hadoop Swot

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With the rapid development of science and technology, information technology has gradually matured. The integration of a lot of complicated information has gradually spawned the technology of big data. Under the adjustment of relevant technicians, big data has also been applied in many fields. The government attaches great importance to the physical health of college students, and monitoring the development of college students’ physical health must be consistent with the concept of coconstruction, cogovernance, and sharing. In this article, advanced technologies such as cloud, Internet, mobile computer, and data fusion are applied to the products in the medical field. Under the basic principle of “patient-centered,” a digital and visual model is established. Through information technology, patients can realize limited medical treatment. The sharing of resources promotes the optimization of medical service processes. The method used in this article is big data analysis. Big data is widely used after high-performance analysis to achieve the purpose of reducing cost, shortening time, increasing artificial intelligence decision-making, and analyzing the accuracy rate. It can be concluded from the research in this article that the improved DCFA algorithm is used to optimize the SVM and the original FA algorithm to optimize the SVM algorithm for example verification, and the algorithm in this article is optimized by 35% compared with the traditional algorithm.

1. Introduction

With the continuous burgeon and maturity of hadoop technique, people have now mastered the ability to obtain message from different sources, analyze message, and apply message. After high-performance swot, hadoop is widely used in corresponding fields to reduce costs, shortening time, increasing artificial intelligence decision-making, and analyzing the accuracy rate. The annual physical fitness test work consumes a lot of people’s energy and financial wealth, the reported data has a lot of errors, and the subsequent application of the test data also has a lot of problems. The problem is that the students are only trying to complete the test, and there is no modification in the physical health of the students after the test.

From the beginning of the popularization of electronic case systems in major medical institutions, to the networking of electronic case systems between chain medical institutions and cooperative medical institutions, the electronic case system has completed the accumulation course from quantitative change to qualitative change and gradually formed a set of independent large-scale medical institutions. The data system provides strong support for national health, medical services, and medical research [1]. Due to the uneven distribution of medical wealth, there are differences between urban and rural areas and regional differences, resulting in the shortage of clinical diagnosis and treatment service wealth and difficulties in seeing a doctor. After computers, the Internet, and mobile communications, the Internet of Things technique has become a typical representative of the third message employment revolution. At present, although the continuous decline of the health status of university students in our country has been temporarily suppressed, there is still a long way to go for significant modification, which limits the burgeon of university students’ physical health [2]. With the continuous modification
of people’s material living standards, diseases in the middle-aged and elderly are constantly developing towards younger people, and the outbreak rate is also increasing. How to control and prevent them has become a key research direction in my country’s public health management. The physical health testing of students not only is a matter of the school’s sports department, but also requires the courageous cooperation of the school’s academic staff, academic affairs, logistics, hospitals, and other departments to strengthen management, prevent data fraud, and ensure that the reported data can accurately reflect the true situation of students’ physical health. The flexible adaptability and huge value of hadoop technique have prompted the integration of medical care that had nothing to do with it and gradually formed branches such as big health and smart medical care. Various data developed based on hadoop are significantly better than independent burgeon [3]. The use of hadoop in the field of mobile medical care can well meet the burgeon needs of the mobile medical employment. On the other hand, hadoop can help to realize the sharing of mobile medical wealth and solve the problem of uneven distribution of medical wealth. The modern health management system carries out application services and business innovation through the operation of the Internet of things, intelligent perception, Hadoop computing, intelligent identification and other modules, which has a positive and far-reaching impact on people’s production and life [4]. The physical health of university students is very important to the future of the country, and the state attaches great importance to the health of university students. The traditional public health management model has been unable to adapt to the new needs of the new era. With the emergence of techniques such as the Internet, hadoop, and intelligence, the use of health management systems based on hadoop environments to control medical expenses and ensure personal health benefits through reasonable diet, moderate medication, moderate exercise, and adjustment of living habits has become an important topic in health medicine [5]. Through the survey, it is found that the attitude of university students towards the physical fitness test is relatively negative. There are many reasons for this situation, but there are mainly two aspects. One is that students do not have a deep understanding of the purpose of the test, and some students do not even know the purpose of the test, perfunctory [6].

The Internet of Things technique has been developed into various wearable products and supporting equipment with its advantages of visual design, real-time data collection, motion trajectory tracking, energy consumption judgment, compact and easy to carry, and remote monitoring for real-time physical health [7]. The method of hadoop swot can be used to evaluate the health status of individuals by analyzing the data of multiple physical examination results and monitoring data of vital signs and changes in biomedical indicators, and give reasonable suggestions, so as to obtain value-for-money healthcare products at low prevention costs [8]. The practical application and future burgeon of the smart medical employment will become an important task for hadoop workers around the world.

This article presents big data. Big data is not simply a pile of large amounts of data. The focus of big data is the analysis of big data. Only through analysis can a lot of intelligent, in-depth, and valuable information be obtained. Therefore, the analysis method of big data has become important in the field of big data, which can be said to be the decisive factor in determining whether the final information is valuable.

This article proposes a smart medical system, which is an important part of comprehensively promoting health construction and an important measure to protect the health of the people. A smart medical system, that is, through the construction of a modern medical information system, is combined with the relatively mature Internet of Things technology at this stage.

Section 1 is an overview of the thesis. Section 2 introduces the relevant theoretical basis of related work. Section 3 writes the theoretical basis of the thesis. Section 4 is system construction. Section 5 is the summary of the full text.

2. Related Work

Reference [9] proposed that life is based on “negative entropy,” that is to say, life extracts “order” from the environment to maintain the organization and evolution of the system. Reference [10] pointed out that life is the way of protein body, and its essence lies in the continuous self-renewal of protein chemical composition. Reference [11] proposed that the characteristics of living systems include purposefulness and planning, as well as autonomous morphogenesis and reproductive invariance. Reference [12] proposed to define life with self-reproduction, metabolism, heredity, and evolution as features. Reference [13] proposed that the essence of life is the requirement of survival. Reference [14] proposed that there is a certain relationship between university students’ physical self-evaluation and individual health level, and mastering the knowledge of correct evaluation of self-physical health can promote physical health. Reference [15] proposed that the fitness environment is very important for fitness exercise, and exercising in a suitable environment is conducive to human health, while an unsuitable environment will affect human health. Reference [16] proposed that the overall good physical fitness is closely related to the modification of the physical fitness environment through the swot of the physical fitness monitoring data of Shanghai citizens. Reference [17] proposed to design fitness equipment for the purpose of promoting health. Reference [18] proposed that individuals with a large number of sports facilities and equipment at home spend significantly less time in meditation. Reference [19] proposed that unscientific fitness schedule affects the implementation of a comprehensive fitness program. Reference [20] proposed to choose appropriate sports clothing and appropriate fitness location to reduce the occurrence of injury in fitness walking. Choosing appropriate exercise time and fitness location can reduce sports injury.

Disrupting telemedicine will bring new opportunities and vitality to grassroots informatization construction. The rich application forms expand the medical models and
methods, provide more choices for the medical care services at the remote grassroots level, and reduce medical expenses to a certain extent. In the current era, the use of cloud computing and hadoop to build a smart medical platform can provide patients with more diverse message support and solve the difficult problem of seeing a doctor.

3. Introduction to Big Data and Smart Healthcare

3.1. What Is Hadoop. With the rapid burgeon of the Internet, the Internet of Things, and social networks, all kinds of message and data have grown into hypergeometric data, which has accelerated the penetration of informatization into all levels of society [21]. Especially in recent years, “hadoop” has become a hot spot of concern around the world. The purpose of hadoop research and burgeon is to develop hadoop technique and apply it to related fields and promote its breakthrough burgeon by solving huge data courseing problems [22]. Big data not only changes people’s daily life, but also significantly affects the decision-makers, management and business models of enterprises, and the acquisition of competitive intelligence. Big data, an IT employment term, refers to a collection of data that cannot be captured, managed, and courseed by conventional software tools within a certain time frame. It requires new courseing modes to have stronger decision-making, insight, and course optimization capabilities. Big data refers to the use of all data for swot and courseing without using shortcuts such as random swot (sampling survey). At present, it is generally considered that “PB” level data are of the order of hadoop [23]. The physiological data of the monitoring object collected by the physiological data collection terminal are courseed by the embedded WiFi control module and uploaded to the server in real time through the WiFi wireless network. The system software structure is shown in Figure 1.

The significance of hadoop does not lie in the large data capacity, but in the discovery of useful and valuable message for people through the storage, management, and swot of hadoop. Some people compare data to a coal mine of energy. Of course, the bigger the coal mine, the better, but the key to hadoop is not “big,” but “useful,” value content, and mining cost is far more important than quantity. Big data, as the name suggests, is very large. The data sources and devices that are generated are constantly increasing, and at the same time, many data such as videos, photos, and comments generated by social media are unstructured hadoop. A large number of new techniques have emerged in the field of hadoop, and they have become powerful weapons for hadoop acquisition, storage, courseing, and presentation. Data are rapidly expanding and becoming larger, which determines the future burgeon of enterprises. Although enterprises may not realize the hidden dangers of problems caused by the explosive growth of data, as time goes by, people will become more and more aware of data importance to business. The highest level of message fusion is decision-level fusion. The principle is that each sensor observes the measured target independently. After the target data are collected by the sensor, the sensor can independently correct the raw data and remove redundant data. The decision-level fusion model is shown in Figure 2.

Accuracy (courseing, noise), diversity (heterogeneity of data), and speed (constantly changing data sources) through scaling hadoop size requires relevant, contractual government mechanisms to ensure hadoop quality and to think.

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Figure 1: System software structure diagram.
about data. The significance of hadoop is not to master huge data message, but to systematically course and analyze useful data message. Big data storage technique usually has the following courseing methods. One is a new database cluster with MPP (massive parallel courseing) architecture. In the MPP system architecture, each SMP (multicourseing structure) node can run its own operating system and database, that is, a new type of database cluster in which the CPU within each node cannot access the memory architecture of the other node. In the message age, data come from a variety of sources. It does not refer to numbers in our traditional sense, but refers to various forms of messages that can be stored on electronic devices, including web pages, audio, pictures, geographic locations, and office documents. This wide variety of data types requires higher data courseing capabilities and methods. Big data is not simply a pile of large amounts of data. The focus of hadoop is the swot of hadoop. Only through swot can a lot of intelligent, in-depth, and valuable messages be obtained. Therefore, the swot method of hadoop has become important in the field of hadoop, which can be said to be the decisive factor in determining whether the final message is valuable. Although hadoop is no longer unfamiliar as a hot new technique term such as cloud computing and the Internet of Things, in reality, many people’s understanding of it is based on literal meaning, which leads to confusion in the cognition of hadoop. In the future, it is difficult to give an exact answer as to how amazing the scale of data generated by human society will be, but what is certain is that human society has quietly entered the era of "hadoop."

3.2. What Is Smart Healthcare. Establishing a smart medical system, giving full play to the advantages of residents’ health files, and sharing residents’ health message and Krankenkätes will be more conducive to the people’s medical treatment and the rational use of government public health wealth. As an interdisciplinary subject of life sciences and message technique, smart medical care provides users with medical and health interactive service guarantees, and has gradually become an indispensable part of future life. At present, there is no unified conclusion on smart medicine in my country, and there is a great controversy in the clinical application course. Seeing a doctor has always been a major event closely related to each of us, and it is also the focus of the common people. “Seeing a doctor is expensive and difficult” has always been the voice of many people, especially for the people in remote mountainous areas. At present, the academic community has not reached a unified conclusion on the definition of smart medical care, and there is still some controversy. With the gradual maturity of techniques such as the Internet of Things, cloud computing, and mobile Internet, the informatization and integrated smart medical blueprint in the medical field has gradually emerged in front of people. On the basis of introducing the concept and business form of smart medical treatment, it expounds the technical characteristics of smart medical application, that is, a wide range of techniques, strong individualization of technical requirements, and high technical thresholds. It is predicted that the application scope will be wider, the demand for IoT health terminals will increase sharply, and the interconnection of medical message will be more comprehensive.

The smart medical system is an important part of comprehensively promoting the construction of a healthy China and an important measure to protect the health of the people. A smart medical system, that is, through the construction of a modern medical message system, is combined with the relatively mature Internet of Things technique at this stage. Smart healthcare is an emerging discipline and an interdisciplinary discipline that integrates life sciences and message technique. As a product of the application of advanced techniques such as cloud, Internet, mobile computer, and data fusion in the medical field, smart medical care optimizes the allocation of medical wealth through message technique under the principle of "patient-centered" so as to provide better quality medical services to the people. Most scholars generally believe that the so-called smart medical care is the product of applying advanced techniques such as the cloud, the Internet, mobile computers, and data fusion to the medical field, a new type of medical system that realizes the sharing of limited medical wealth by patients through message technique, thereby promoting the optimization of medical service courses. Smart healthcare refers to a medical service system with IoT perception, message movement, message interconnection and sharing, and highly intelligent decision-making. Smart healthcare is an emerging discipline and an interdisciplinary discipline that integrates life sciences and message technique.

Seeing a doctor has always been a major event closely related to each of us, and it is also the focus of the common people. “Seeing a doctor is expensive and difficult” has
always been the voice of many people, especially for the people in remote mountainous areas. The key technique of smart medical care is an important part of modern medicine and communication technique. In the message courseing technique, it is also necessary to realize the integration of higher-level message, so that the efficiency of the raw data can be fully exerted, and a good foundation can be laid for the smooth burgeon of nursing work. The technique mainly includes network computer technique and distributed computing technique. In smart medical care, the main task of message courseing technique is to comprehensively sort out and analyze the data that have been precourseed or originally measured by sensors. Smart healthcare breaks the traditional medical system thinking that separates medical physical infrastructure from IT infrastructure such as data centers and networks. In the smart healthcare system, from medicines to various sensors, any part of the medical treatment course can be perceived and measured. By creating a regional medical message platform centered on electronic health records and using Internet of Things-related techniques, smart healthcare realizes the interaction between patients and medical staff, medical institutions, and medical equipment, and gradually achieves comprehensive informatization.

Smart medical care has been integrated into our daily life, such as in the field of maternal and child health. The unified “e+maternal and child health” platform can customize different functions for different medical institutions and can meet relevant performance, capacity, and other requirements.

4. Research on Physical Health Monitoring and Management of University Students Based on Hadoop Swot

4.1. Medical Information Security. Under the background that the country is actively promoting the burgeon of the “Internet + medical” employment, the Internet + medical employment is developing rapidly, and new opportunities are about to be ushered in. By comparing the status quo of “Internet + medical care” at home and abroad, it is found that there are problems such as insufficient security technique level, lack of supervision, and loopholes in message management in Internet medical message security. This article analyzes the current situation of message security of “Internet + medical care” and the causes of message security problems. “Internet + medical treatment” is a new type of medical and health service format formed by the deep integration of the Internet as a carrier and message technique as a means (including mobile communication technique, cloud computing, Internet of Things, hadoop) and traditional medical and health services. In general, under such a background, it is very necessary to conduct research on the security problems faced by medical message in the Internet + era and their corresponding solutions. According to the classification of forms, personal message is mainly divided into personal basic message, application equipment message, and network account message. In order to quantitatively analyze these health data, it is necessary to establish a mathematical model of the corresponding health data.

According to statistics, the health values of the same attribute basically conform to the normal distribution, and the health data model is shown in the following formula:

\[ X \sim (\mu, \sigma^2). \]  

The random sample \( X: (x_1, x_2, \ldots, x_n) \) is rearranged from small to large to obtain \( x_{(1)} \leq x_{(2)} \leq \ldots \leq x_{(n)} \) according to its numerical value. According to the statistical rules, the standardized order statistic \( G \) can be calculated according to the following formula.

If the minimum \( x_{(1)} \) has obvious anomalies, the statistic \( G \) can be expressed as follows:

\[ G = \frac{\bar{X} - x_{(1)}}{s}. \]  

If the maximum value \( x_{(n)} \) has obvious anomalies, the statistic \( G \) can be expressed as follows:

\[ G = \frac{x_{(n)} - \bar{X}}{s}, \]  

where \( \bar{X} \) is the sample mean and \( s \) is the sample standard deviation. According to the definition, the sample standard deviation can be expressed as follows:

\[ S = \sqrt{\frac{1}{n-1} \sum_{i=1}^{n} (x_i - \bar{X})^2}. \]

Among them, personal message and online account message are the primary control issues in the promotion of “Internet + medical care.” Judging from the current burgeon of the “Internet + medical” platform, there are still some burgeon difficulties, mainly reflected in people’s distrust of the “Internet + medical” platform, and the belief that the online platform has greater uncertain risks and lack of soundness. Effective mechanisms provide protection for patients’ personal message, making the burgeon of the “Internet + medical” platform still in the early stages of burgeon. Driven by innovative Internet techniques, “Internet + medical care” provides various forms of healthcare services such as health education, medical message inquiry, online consultation for diseases, appointments for diagnosis and treatment, electronic prescriptions, telemedicine, and mobile medical care. At present, in the field of decision-level data fusion, the main research methods are the D-S evidence theory and the neural network method. The D-S evidence theory is based on the Bayesian theory, which determines the accuracy of events by constructing probabilities.

There is an identification framework \( \Theta \), there are two groups of evidences, the basic trust distribution functions are \( m_1 \) and \( m_2 \), and the focal elements are \( A_1 \) and \( B_1 \), respectively, and then, the D-S synthesis rule is divided into the following two steps:
Conjunction:
\[ m(A) = \sum_{A_i \cap B_j = A, A \in \Omega} m_1(A_i) m_2(B_j), \]
\[ k = \sum_{A_i \cap B_j = \phi} m_1(A_i) m_2(B_j). \]

Normalized:
\[ m(A) = m(A)^* + \frac{m(A)^*}{1 - k}, k \neq 1. \]

The following equation can be obtained:
\[ m(A) = \begin{cases} \sum_{A_i \cap B_j = A} m_1(A_i) m_2(B_j), & A \neq \phi, \\ \frac{\sum_{A_i \cap B_j = A} m_1(A_i) m_2(B_j)}{1 - k}, & A \neq \phi. \end{cases} \]

When there are multiple evidences, the basic probability distribution function is \( m_1, m_2, \ldots, m_n \), and the synthesis rule is expressed by the following equation:
\[ m(A) = \sum_{A_i \cap B_j = A, 1 \leq i \leq N} m_1(A_i), A \neq \phi. \]

The conflict system \( k \) of equation (6) becomes
\[ k = \sum_{A_i = \phi, 1 \leq i \leq N} m_1(A_i), k \neq 1. \]

Insufficient relevant laws and regulations, potential security risks in the software and hardware platforms, and illegal intrusion of external networks may lead to the loss or theft of medical message, affecting the operation of the hospital itself. Basic personal message is usually provided in various public institutions and applications for personal matters, while online account message is mainly provided in third-party social platforms and application software. In the databases of medical institutions and enterprises, it is necessary to store a large amount of patient message, medical message, and financial message, which is an important factor to increase the hidden dangers of message security on the “Internet+medical” platform. With the

The current "Internet+medical treatment" shows part of the desertedness, which is reflected in the public’s distrust of the "Internet+" era. Filling in personal privacy on an uncertain and risky online platform, there is no effective mechanism or legal protection for individuals, which is also
one of the main reasons for the tepidness of the “Internet + medical” platform. In order to standardize the recall rate and false alarm rate, several algorithms are simulated at the same time, and the simulation results are shown in Figure 5.

Health insurance data are widely used in medical message, and the high sensitivity of medical message makes it more valuable than ordinary people’s message, and the amount of message involved in the Internet platform is more concentrated. The “Internet + medical treatment” model changes the traditional medical treatment mode, making it convenient and fast to seek medical treatment. The service platform integrates medical wealth, real-time communication, interconnection, and resource sharing, and can achieve services that traditional medical care cannot complete. In order to further illustrate the improved algorithm, this paper uses the improved DCFA algorithm to optimize the support vector machine and uses the original FA algorithm to optimize the support vector machine algorithm for example verification. The optimization iteration diagram is shown in Figure 6. As shown in the figure, the algorithm in this article is 35% more optimized than the traditional algorithm.

In order to verify the choice of machine learning algorithm, the genetic algorithm and particle swarm algorithm are selected for comparison, and the accuracy rate is shown in Figure 7.

4.2. Internal Sharing of Electronic Krankenakte Message.

As an important part of electronic medical message, one of the main problems in the promotion and application of electronic Krankenaktes is how to share various electronic Krankenaktes message conveniently and quickly, and at the same time protect the privacy of patients. There is a close relationship between individuals, ranging from colds and colds to surgical treatment-related diseases, and the corresponding message will be concentrated in the Krankenaktes. At present, hospital informatization has become the focus of my country’s medical reform, among which the popularization and application of electronic Krankenaktes in various hospitals has become the focus of hospital informatization reform. The popularization of electronic Krankenaktes has significantly improved the original problems of unbalanced medical wealth, high medical costs, and high pressure on patients to seek medical treatment. Central-level data fusion means that each terminal sensor transmits the pre-courseing results to the fusion center after minimal courseing (referring to some simple data courseing). The central-level fusion structure is shown in Figure 8.

Electronic Krankenaktes refers to computerized Krankenaktes; that is, general literature Krankenaktes are electronically and effectively managed. It is an electronic patient record based on a specific system that provides users with access to complete and accurate data, alerts, prompts, and clinical decision support system capabilities. The establishment and promotion of residents’ health files and electronic Krankenaktes is the focus of our country’s medical and health message construction under the background of the new medical reform. The traditional Krankenaktes are stored in the form of handwritten paper, and it may be difficult to ensure the effective use of the corresponding message for various reasons. At this time, electronic Krankenaktes are introduced, which can better retrieve and use Krankenakte message, and then open the door to smarter medical services. The improved FP-growth algorithm has a significant modify in computing speed and a better performance. The excavation rate comparison chart is shown in Figure 9.
At present, with the large-scale trial of electronic Krankenaktes in hospitals, the problems brought about by them have attracted more and more attention from both doctors and patients and the public. To realize electronic Krankenakte is to establish an electronic Krankenakte system, including the whole course of collection, coursing, storage, transmission, and service of patient message. At present, in the course of patient referral, hospitals and community health centers, as medical institutions of different levels, do not share the patient’s disease treatment course and medical message with each other. In the course of hospital digitization, it is more important to use the correct From the perspective of examining the effectiveness of the message-sharing mechanism of electronic Krankenaktes, compared with traditional paper Krankenaktes, electronic Krankenaktes can better store and record Krankenakte message, and realize message sharing and exchange between departments more conveniently; at the same time, it can also provide “active” services, including Krankenakte retrieval, intelligent knowledge database, medical quality statistics, medical evaluation, and economic statistical swot. Unnecessary review leads to a decrease in the efficiency of medical services and an increase in medical expenses for patients. Electronic Krankenaktes can well realize the preservation of patients’ life-long health message and healthcare message, and ensure that message can be continuously preserved for each diagnosis and treatment. Whether it is the content of doctor’s orders, the content of drug use, or the use of consumables, it can be well integrated. As the amount of data increases, the coursing time of each step increases slowly. Figure 10 shows the stitching diagram of data volume and calculation rate. Table 1 and Figure 10 show the stitching diagrams of data volume and calculation rate.

The construction of medical sharing platform will be an important way to solve these problems, and a regional medical message-sharing platform will be a new research direction to study this way horizontally and vertically. For the entire medical course, electronic Krankenaktes can improve the efficiency of medical treatment, help doctors choose the best medical plan, and improve the quality of medical work, improve the quality of hospital management and strengthen the monitoring of each medical link, and provide accurate and shared patient message, to support the course of telemedicine. The establishment of a regional unified electronic medical message-sharing platform can reduce the cost of diagnosis and treatment for patients, provide a more detailed reference for doctors’ diagnosis and treatment work, and enable higher-level hospitals to play a good guiding role in the diagnosis and treatment of lower-level hospitals. With the gradual promotion of electronic Krankenaktes in various hospitals, how to effectively and rationally use and integrate these wealth has changed the original status quo of independent management, and has
gradually become a key area of research by experts and scholars from all walks of life. For important private and personalized key message, if a stable and secure electronic Krankenakte message-sharing mechanism can be formed, the following effects can be exerted.

5. Conclusions

As a national basic project of big data, smart medical big data has formed insurmountable scale barriers and investment barriers. The country can realize completely independent big data system development research through the built intelligent medical big data. There will be more users using health applications and using smart terminals to access the medical platform. Telemedicine will surely become an indispensable and important part of the life of grassroots troops in the future. Western developed countries have summed up their experience from the process of physical health examination and monitoring. The convenience and accuracy of health services can be improved by breaking down information exchange, sharing, and applying test data. We need to learn this method and apply it to the field of smart medicine. It can be concluded from the research in this article that the improved DCFA algorithm is used to optimize the SVM and the original FA algorithm to optimize the SVM algorithm for example verification, and the algorithm in this article is optimized by 35% compared with the traditional algorithm. The combination of big data processing technology and traditional medicine can provide us with effective and rapid health data analysis services in the physical health monitoring and management of college students, and provide reliable and scientific health plans.

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

References

[1] N. R. Frank, J. Mead, and B. G. Ferris, “The mechanical behavior of the lungs in healthy elderly Persons,” Journal of Clinical Investigation, vol. 36, no. 12, pp. 1680–1687, 1957.
[2] S. C. Gates, C. C. Sweeley, W. Krivit, D. DeWitt, and B. E. Blaisdell, “Automated metabolic profiling of organic acids in human urine. II. Analysis of urine samples from ‘healthy’ adults, sick children, and children with neuroblastoma,” Clinical Chemistry, vol. 24, no. 10, pp. 1680–1689, 1978.
[3] G. Z. Williams, G. M. Widdowson, and J. Penton, “Individual character of variation in time-series studies of healthy people: II. Differences in values for clinical chemical analytes in serum among demographic groups, by age and sex,” Clinical Chemistry, no. 2, p. 2, 1999.
[4] J. E. Turner, J. P. Campbell, K. M. Edwards et al., “Rudimentary signs of immunosenescence in Cytomegalovirus-seropositive healthy young adults,” Age, vol. 36, no. 1, pp. 287–297, 2014.
[5] C. M. Foster, K. M. Kennedy, M. M. Horn, D. A. Hoagey, and K. M. Rodrigue, “Both hyper- and hypo-activation to cognitive challenge are associated with increased beta-amyloid deposition in healthy aging: a nonlinear effect,” NeuroImage, vol. 166, pp. 285–292, 2018.
[6] Y. Wang, G. B. Tian, R. Zhang et al., “Prevalence, risk factors, outcomes, and molecular epidemiology of mcr-1 -positive Enterobacteriaceae in patients and healthy adults from China: an epidemiological and clinical study,” The Lancet Infectious Diseases, vol. 17, no. 4, pp. 390–399, 2017.
[7] M. Martinez-Lavin, M. Vidal, R. E. Barbosa, C. Pineda, J. M. Casanova, and A. Nava, “Noradrenaline-evoked pain in fibromyalgia. A randomized pilot study ISCRNTN70707830,” BMC Musculoskeletal Disorders, vol. 3, no. 1, p. 2, 2002.
[8] J. Li, F. Zhao, Y. Wang et al., “Gut microbiota dysbiosis contributes to the development of hypertension,” Microbiome, vol. 5, no. 1, p. 14, 2017.
[9] D. Marazziti, L. Conti, C. Pfanner et al., “No correlation between aggression and platelet 3H-paroxetine binding in obsessive-compulsive disorder patients,” Neuropsychobiology, vol. 43, no. 3, pp. 117–122, 2001.
[10] N. Álvarez-Sánchez, A. I. Álvarez-Rios, L. Rodriguez-Mañas et al., “Homocysteine levels are associated with bone resorption in pre-frail and frail Spanish women: the Toledo Study for Healthy Aging,” Experimental Gerontology, vol. 108, pp. 201–208, 2018.
[11] G. Reus-Soffer, M. Pavlyha, C. Ngai et al., “Effects of PCSK9 inhibition with alirocumab on lipoprotein metabolism in healthy humans,” Circulation, vol. 135, no. 4, pp. 352–362, 2017.
[12] D. Simmons, R. Devlieger, A. V. Assche et al., F. J. Snoek, J. G. Jelsma, and M. N. van Poppel, Effect of physical activity and/or healthy eating on GDM risk: the DALI Lifestyle Study,” Journal of Clinical Endocrinology and Metabolism, vol. 102, no. 3, p. 903, 2017.
[13] S. M. Vanegas, M. Mohsen, J. B. Barnett et al., “Substituting whole grains for refined grains in a 6-wk randomized trial has a modest effect on gut microbiota and immune and inflammatory markers of healthy adults,” American Journal of Clinical Nutrition, no. 3, pp. 635–650, 2017.
[14] D. Cooper, “The role of calcium supplementation in healthy musculoskeletal ageing: an expert consensus meeting of the European society for clinical and economic aspects of osteoporosis, osteoarthritis and musculoskeletal diseases (ESCEO) and the international foundat,” Journal of Physical Chemistry B, vol. 28, no. 2, pp. 447–462, 2017.
[15] B. D. Krawitz, S. Mo, L. S. Geyman et al., “Accurability index and axis ratio of the foveal avascular zone in diabetic eyes and
healthy controls measured by optical coherence tomography angiography,” *Vision Research*, S0042698917300196, 2017.

[16] S. Dou, P. Gadonna-Widehem, V. Rome et al., "Characterisation of early-life fecal microbiota in susceptible and healthy pigs to post-weaning diarrhoea,” *PLoS One*, vol. 12, no. 1, Article ID e0169851, 2017.

[17] R. Takeda, S. L. Hissen, A. S. L. Stickford, and Q. Fu, “Impact of oral contraceptives on sympathetic neural and cardiovascular responses during static handgrip to fatigue in healthy women,” *Clinical Autonomic Research*, vol. 31, no. 6, pp. 779–781, 2021.

[18] C. Daskalopoulou, B. Stubbs, C. Kralj, A. Koukounari, M. Prince, and A. M. Prina, “Physical Activity and Healthy Ageing: A Systematic Review and Meta-Analysis of Longitudinal Cohort studies,” *Ageing Research Reviews*, S1568163717300302, 2017.

[19] R. J. Barry and F. M. De Blasio, “EEG differences between eyes-closed and eyes-open resting remain in healthy ageing,” *Biological Psychology*, vol. 129, pp. 293–304, 2017.

[20] E. Johansson, V. Brache, F. Alvarez et al., "Pharmacokinetic study of different dosing regimens of levonorgestrel for emergency contraception in healthy women,” *Human Reproduction*, vol. 17, no. 6, pp. 1472–1476, 2002.

[21] D. S. Baldwin, R. Hou, R. Gordon, N. T. Huneke, and M. Garner, "Pharmacotherapy in generalized anxiety disorder: novel experimental medicine models and emerging drug targets,” *CNS Drugs*, vol. 31, no. 4, pp. 1–11, 2017.

[22] R. W. Morton, K. T. Murphy, S. R. McKellar et al., "A systematic review, meta-analysis and meta-regression of the effect of protein supplementation on resistance training-induced gains in muscle mass and strength in healthy adults,” *British Journal of Sports Medicine*, bjsports-2017-097608, 2017.

[23] V. M. Savage, A. B. Herman, G. B. West, and K. Leu, "Using fractal geometry and universal growth curves as diagnostics for comparing tumor vasculature and metabolic rate with healthy tissue and for predicting responses to drug therapies,” *Discrete and Continuous Dynamical Systems - Series B*, vol. 18, no. 4, pp. 1077–1108, 2013.