Research Article


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Big data and mobile edge computing information technology have revolutionized traditional industries’ development. The organic integration of community social work and big data technology will undoubtedly promote the growth of community social work services, thanks to the new information technology platform for big data. In terms of the future of big data-driven social work, it is primarily reflected in the following: in the application of social work, big data can acquire and update real human behavior data in real time, and eliminating the need for subjects’ subjective reports in the data collection process; It can also provide a basis for public decision-making, which is worthy of our active exploration and innovation, provide efficient and accurate technical means for risk population assessment and crisis intervention and have a more accurate and intuitive grasp of the temporal and spatial distribution of service personnel and basic social service facilities. The core of professionalization of social work is improving the post-setting system for social workers in our country, improving their treatment, and strengthening the construction of professional ethics for social workers in our country. A big data social work flow adaptive scheduling optimization algorithm based on the chaotic cloud diversion mechanism is proposed to address the problems of high costs, poor time convergence performance, and poor cost accounting quality in the current social workflow adaptive scheduling optimization algorithm. As an important part of social governance, social work accelerates the process of social work specialization to improve decision-making efficiency.

1. Introduction

In recent years, with the large-scale popularization of the Internet, the Internet of Things, cloud computing, and various types of sensors, all kinds of data generated by individuals and organizations have begun to grow rapidly in all walks of life. Compared with the government and the market, the third sector and the entire social level have gradually developed and grown. The Ministry of Civil Affairs has gradually expanded its community services to include overall community development and construction, as well as professional and professional social work. This has also begun to become explicit in terms of objective demand [1]. Because the big data social workflow has strong chaotic characteristics, cost accounting based on a one-time verification mechanism on the cost of the flow in a two-way manner is required, which leads to problems with low time convergence and high cost in the current scheduling algorithm, necessitating the scheduling adaptation plan. Certain limitations apply to the use of Internet. As a result, social work must confront Internet thinking head-on rather than reacting to it from the sidelines and instead seek new breakthroughs [2]. To study the professionalization of social work in China, we need to look at the issues that have arisen as a result of this development, as well as the social environmental factors that have contributed to these issues, in order to provide a theoretical foundation for our countermeasure analysis [3].
1.1. Theoretical Significance of Social Work Professionalization. Promoting the development of social work professionalization from a policy perspective is a new perspective to study the theory of social work professionalization. Social work professionalization cannot be separated from the policy guarantee. At present, social work professionalization can only be regulated from a macro perspective to ensure its orderly development, and it is also a supplement and improvement to the construction of social governance system [4]. The development process of social work in different countries will vary with the level of social and economic development and the problems people will face in a certain period of time. The Internet has shaped a brand-new social life form, and its influence on the whole society has entered a new stage. In the Internet era, QQ group, blog, Weibo, and other online social network communities are constantly emerging, especially the widespread use of social apps such as WeChat, which is constantly generating a large number of data with social attributes [5]. The lack of system inhibits the connotation of community work and residents’ recognition of community work. The purposeful collection, analysis, and utilization of big data technology can produce results of social or economic value, so the data information base has become an intangible treasure house of resources [6]. Social work needs to explore how to make full use of big data to deliver professional social services more efficiently, advocate reasonable social policies more accurately so as to achieve professional goals, and explore the construction of theoretical system, research methods, and practice modes based on big data, that is, social work driven by big data [7].

1.2. The Practical Significance of Social Work Professionalization. Further promoting social work professionalization is not only related to social development but also related to political stability. It is an effective means of resolving social problems, resolving social contradictions, and promoting the development of a social governance system; it is also the only way to improve people’s livelihoods, achieve social equity, and create a harmonious society [8]. With the deepening reform of China’s economic system, social management system, and social welfare system, the functions of various social organizations began to divide, and some social functions that were previously carried out by the government, enterprises, and institutions were gradually stripped out and returned to society and community [9]. The researchers proposed several adaptive scheduling optimization algorithms for big data social work to solve the bottleneck factors in the current research process, which partially solved the problems in the deployment process. The widespread use of the Internet has ushered in a new era and society. The field of social work must seriously consider how to confront and adapt to this new era [10]. Social work is a profession with a lot of service objects, a lot of service fields, and a lot of service pertinence. As a foundation, it requires accurate and comprehensive information. Understanding and applying big data technology will undoubtedly aid social workers in increasing service efficiency and content [11]. The organic integration of community social work and big data technology with the help of big data, a new information technology platform, is bound to reshape the service mode of social work and greatly improve the service quality of social work [12].

2. Related Work

“Social work is an art and science that improves interpersonal relationships between individuals and groups by providing helpful services and promoting their social life functions,” according to literature [13]. Project-based management has become a new general management method, according to literature [14], as the organization responds to changes. It emphasizes the importance of organizations adjusting to changing needs as the external environment changes. As a result, project management is becoming a more popular method of management. Professionalization of social work, according to literature [15], is a process in which social work activities based on meeting the specific needs of human beings are recognized by society as a specialized professional field and receive professional development. According to literature [16], social work’s professionalization is inextricably linked to its economic and social transformation. The level of socioeconomic development and the problems that people face at any given time will influence the development process of social work. Using the ideas and specific methods of project management, combining its management theory and skills with the actual management of social work projects, innovatively propose, implement, and improve social work projects can be seen in the literature [17], which integrated relevant domestic and foreign researches. The management method is a scientific, necessary, and social work management method with a lot of room for growth, as well as an essential research topic and direction for the future of social work management. Literature [18] believes that the professionalization of social work has three aspects: social work knowledge background, determined professional goals and activity fields, and professional autonomy.

Literature [19] emphasizes that social work is a work with strong value orientation, but it is also a work facing social practice problems. Social work pays attention to these practical problems, which are mostly caused by social changes. Literature [20] proposed a self-adaptive scheduling algorithm of big data social workflow based on Lagrange self-deletion mechanism. By randomly adding Lagrange check factor, the random allocation of big data social workflow can be realized, and the cache factor can be self-deleted during the allocation process. Literature [21] holds that there are five professional standards for social work occupation, and a large number of people participate in full-time work and provide needed services; establish training schools to provide educational programs, so that new employees can have the professional knowledge needed by their jobs; establish professional associations to safeguard the interests of employees; by means of registration or industry management, monopoly protection of the professional status of the profession can be obtained; establish the code of professional ethics, guide, and standardize the relationship
between employees and their clients, other professionals and the public. Literature [22] further said that the responsibility of social workers is directly generated from the economic structure of modern society. This is why the degree of professionalism of social work is very low in rural societies or underdeveloped countries with low urbanization. Literature [23] defines the connotation of social work professionalization from the occupational types of social work in China and holds that in the process of social transformation, there are two different types of professionalization of social workers in China, namely, the identity conversion of actual social workers and the professional support professionalization of social work graduates.

3. Methodology

3.1. Establish an Access System for Social Work Institutions. In conjunction with the reform of China’s public institutions, the government should formulate relevant regulations to systematically determine the functions and authorities of China’s government departments in social affairs, gradually transform some units that can provide government purchase services into social work institutions, and actively guide and encourage staff in the institutions to master and use professional social work skills to mediate social disputes. When social workers present service outcomes, they frequently use perceptual language to convey emotion, but objective data is presented in a less intuitive way [24]. With increasing social accountability and industry competition, social work service institutions should not only tell the “story” so that the results can be “understood” but also arm themselves with real and reliable data so that the results can be “spoken.” The detailed process of service performance prediction and analysis of social workflow is shown in Figure 1.

Social workers can reduce social divorce, reconcile social contradictions, and alleviate some factors endangering social stability by means of social correction. In this sense, social workers are not only an effective tool for social transformation but also a new force for the government to carry out social management. In fact, big data bearing the imprint of our lives is showing the society we live in in a new way, which opens up a new social imagination, which is a brand-new topic for social work. The social imagination in the era of big data focuses on unstructured data and revolves around a quantitative world characterized by possibility and fuzziness, thus showing double trends; on the one hand, “digitalization of society”, the data footprints intentionally or unintentionally left by people are more and more abundant, and society is more and more presented in the form of numbers. On the other hand, it is “socialization of numbers”, and data becomes a component of social structure, thus constantly shaping a new society [25]. The content is constructed by the self-evolution structure of flow chaotic cloud based on time factor, and the algorithm flow of this paper is shown in Figure 2.

Community social work is an important part of the whole social work system. First, make a clear career orientation for social workers. The existing system positions social work vocational qualification as professional qualification and skill vocational qualification and professional and technical vocational qualification. At present, we prefer to position it as professional qualification and skill vocational qualification and social worker vocational grade certificate as professional and technical personnel vocational qualification certificate. Second, we should gradually implement employment access for social workers in the existing system. It is the application of social work knowledge, skills, and methods in the community. The establishment of continuing education system for employed social workers mainly starts from two aspects. First, for those who have been engaged in social work and want to obtain a professional degree in social work, we must rely on the educational resources of colleges and universities. We can implement a bonus system for those engaged in social work in the form of adult college entrance examination, so that the social workers can study social work courses in their spare time and make full use of teachers’ resources in colleges and universities. The other is to train the social workers. The training of on-the-job social workers shall be carried out at different levels and in batches, and differentiated training shall be carried out for government and non-governmental organizations, social workers with professional foundation and zero foundation.

3.2. Cultivate Big Data Talents. Big data is a by-product of human activities, such as performing government functions, providing services, managing projects, conducting business and trade, communicating through social media, using electronic devices, and writing, which widely exists in the form of digital storage. Its data content embodies the characteristics of large volume, rapid growth, multiple types, strong authenticity and high application value, and pay more attention to the extraction of the geographical location information of research objects [26]. People’s current food, clothing, housing and transportation, behavior habits, activity periods, hobbies, psychological preferences, etc. will inevitably leave traces and form massive data information. Social workers should fully understand the role and value of data, so as to better supplement the shortcomings of traditional demand research and more accurately grasp the demand and provide services. In the higher education stage, the cultivation of compound talents should focus on social work, offer relevant big data courses, cultivate social workers’ big data thinking ideas, and then carry out relevant learning practices in social institutions through internship or employment. At present, the social service system lacks the data management and analysis framework needed to effectively evaluate the project, so it lacks operability and standardization, which makes the data integration between departments to investigate the long-term cost and benefit of the project have great obstacles. The emergence of big data can effectively improve this situation. Traditional social work relies on data collection methods such as experiments, questionnaires and interviews to study different groups faced by social work, evaluate different social work intervention modes, investigate the performance of different social policies, and use less data-driven strategies based on theory driven and deductive logic. The social workflow scheduling
optimization algorithm adopts the parallel computing model based on hyperplane projection partition to quickly filter the original data set and obtain the service data set, thus effectively improving the algorithm efficiency of data preprocessing. The schematic diagram before hyperplane projection division is shown in Figure 3. The schematic diagram of hyperplane projection after division is shown in Figure 4.
Big data has also derived a concept of openness and sharing. At this stage, due to the individual limitations of social work agencies, the information that social workers can obtain is very limited, especially those that involve important information about the client. The openness and sharing of big data satisfies this need well. Under the big data research mode, the convenience of data acquisition makes it possible to collect a variety of different types of large sample data, which provides a data basis for understanding the macro society and testing the “heterogeneity hypothesis” and “result stability hypothesis” of social phenomena. The in-depth mining and analysis of administrative big data and public service big data is conducive to the construction of macro social work knowledge system. The results of data analysis can be used for service planning and policy advocacy to expand social and policy influence, so as to achieve

Figure 3: Schematic diagram before hyperplane projection division.

![Figure 3](image)

Figure 4: Schematic diagram of hyperplane projection after division.

![Figure 4](image)
the macro goal of social work. The results show that the workflow scheduling algorithm proposed in this chapter makes full use of the spare time of the workflow during cost optimization, and satisfies the requirements of workflow scheduling cost optimization. The execution time analysis under different workflow scales is shown in Figure 5.

The cost optimization analysis under different workflow scales is shown in Figure 6.

Big data is an emerging discipline based on information means, which collects, analyzes and processes various data from many Internet information platforms, and finally excavates data information with social or economic value. Due to the high starting point of big data talents and the late start of relevant education and training, there is a great lack of big data talents at present. The talents who master the technology of big data are innovative scientific and technological talents. They are also professional high-end talents in short supply for national economic and social development. They will play a great role in China’s economic, social, political, and other fields.

4. Result Analysis and Discussion

4.1. Problems Existing in the Professionalization of Social Work in my Country. Soon after the start of our country’s social work career, its professionalization and specialization process is faced with many unavoidable problems in the system, concepts, value positioning, and talents. In order to verify the time efficiency of the optimization algorithm based on workflow scheduling, the experimental results of the time performance analysis of all algorithms are shown in Figure 7.

First, government departments take over some social work responsibilities. “Government and society are not divided” in this new situation, which not only reduces government efficiency but also objectively inhibits or delays the development and growth of various social services, as well as the professionalization and specialization of social work. Second, the level of social workers varies, and the overall professional quality is low. In China, social workers are currently divided into two groups. First, nonprofessionals who are currently working in the field of social work, and second, students who have completed a social work major at a college or university. Social work graduates have better professional qualities than other personnel, but China’s support for graduates majoring in social work in colleges and universities is weak, and social work professional qualifications are not placed in a prominent position, regarded as the basic conditions of social work posts, and green channels for students with social work professional qualifications in vocational grade examinations are not established. Third, despite the fact that developed social service organizations or intermediary organizations possessed the embryonic form of social work organizations at first, there is still a significant gap in the road to professionalization and specialization. The vast majority of social workers and managers in institutions have not been specially trained in professional knowledge and methods of social work, and their social work ability, level, and benefit cannot meet the requirements of social work in the modern sense. In view of this, for the public welfare activities held by social workers, it is necessary to plan the overall content before implementing it. Fourth, the government leadership and all sectors of society have different understanding of social work, a scientific and reasonable evaluation system has not been established, and high-quality talents have low enthusiasm to engage in social work. China’s personnel system lacks the post setting of social work professional and technical posts, and the training and supply of professionals are relatively insufficient and lagging behind. Fifth, China’s social workers are often in a state of fighting alone. Most social work posts exist in isolation and lack professional support. Even social workers with professional background will encounter difficulties such as insufficient knowledge reserve and skills need to be updated. At present, China has not created an environment for social workers and lacks professional supervision and training. There is also a lack of partners who can communicate and negotiate with each other. Social workers often feel that they have more than enough heart and less strength. The breakdown structure of public welfare work is shown in Figure 8.

The professionalization of social work, including community work, depends on the deepening of the reform of economic system, political system, social management system, social welfare and social security system, and the innovation of personnel system and social work system. In the process of system reform and system innovation, the government, social work institutions, and academia should join hands and take practical and effective countermeasures to jointly promote the professionalization of social work in China. At present, China’s social work posts and their scarcity, on the one hand, within the administrative system, there are few social work posts, which is basically in short supply. On the other hand, as the largest employer of social workers, it should be a non-profit organization. By establishing and improving the information platform, timely referring to and introducing advanced management means, social work organizations find the application value of project management methods in social work services, so as to promote the wide application of project management. The development of social work career also depends on the establishment of career system. The development of social work is mainly artificially promoted by the government and education departments. The setting of professional posts is not established according to the professional authority but to bring institutionalized authority to social workers through post setting. Since the construction of China’s social work career system is achieved in a top-down way, post setting has become an effective means to develop the career of social work.

4.2. The Role of Applying Big Data to Social Work. Big data brings the paradigm shift of social science, cross-integrates social behavior and data computing and processing system to study the law and development trend of social operation, and leads the rapid rise of the research field of “computational social science.” Starting from behavioral analysis, computational science can conduct in-depth and meticulous interdisciplinary quantitative research on complex human
behavior patterns and social operation mechanisms, and social work can benefit from this development trend. With the rapid development of the industry, social workers have accumulated a large number of service data and work materials in their services. These first-hand information are kept as materials, but they have not been fully developed and applied. The premise for the application of big data technology is to have true and reliable data information. Social workers can obtain a large number of community residents’ data information through preliminary research and collect the latest data in the community by integrating the life of community residents. Government departments, trade associations, evaluation organizations, and social work service organizations can completely sort out and analyze relevant data, which is helpful to efficiently search information and share resources, and can also play its role in problem discovery, practical guidance, and theoretical research. In terms of discovering and linking public welfare resources, big data...
information itself is a huge, diverse, and interrelated resource pool, from which we can tap valuable information and get corresponding help. At the same time, big data provides us with a lot of indirect useful information. Work should respond to the needs of different groups of people, face different social and cultural contexts, and face the rapid changes of society. The knowledge needed is diverse. If we overemphasize the specialization of social work, it may lead to a closed knowledge dilemma. Therefore, we can collect and utilize data in an unprecedented depth and breadth and serve the research and practice of social work. Considering that in the process of forming big data social workflow, the uploading of various substreams and the guarantee of quality parameters are effectively divided according to their stream dimensions, the corresponding stream structure has strong self-iterative characteristics and can be reconstructed by time factor. In addition, considering that each work substream in the actual process satisfies the independent

![Figure 7: Time performance analysis of scheduling algorithm.](image)

![Figure 8: Activity work breakdown structure.](image)
distribution characteristics, the cost function $M_Q$ in the chaotic cloud diversion process is as follows

$$M_Q = \min \left( \lambda E \| - 2, e^{\lambda E |x^T|} \right).$$  \hspace{1cm} (1)$$

The current processing cost can be normalized and orthogonalized according to the cost function:

$$(M_Q)^P = M_Q(x).$$  \hspace{1cm} (2)$$
It is necessary to perform interval quadratic mapping of the cost function in a discrete state:

\[ p = \min M_Q(x) + \max M_Q(x). \]  

(3)

Let the extraction period in the segmentation process be \( \Delta t \), and the cost characteristic \( \Delta s \) of the fluctuation process satisfies the formula:

\[ \Delta s = p \left\{ \max \int_{\Delta}^{\Delta t} \sqrt{\Delta^2 - 2x^2}dx + \min \int_{\Delta}^{\Delta t} \sqrt{\Delta^2 - 3x^2}dx \right\}. \]  

(4)

The optimization goal of social workflow scheduling is to minimize the execution cost of social workflow within the constrained time, then:

\[ \text{Minimizing: } \sum_{dv} \sum_{k=1}^{num(i)} \text{cost}^i_k x^k. \]  

(5)

In order to determine the time limit interval of the workflow task, it is calculated according to the following formula:

\[ et_i = et_{BL(m)} = \max_{x_{BL(m)}} \left\{ bt_i + \min \left\{ \text{time}^k \right\} \right\}. \]  

(6)

The time utility function of workflow tasks can be defined as:

\[ U_{time} \left( q^k_j \right) = \frac{\text{time}^\text{max}_i - \text{time}^k_i}{\text{time}^\text{max}_i - \text{time}^\text{min}_i}. \]  

(7)

Firstly, the core object of data information is the behavior of community residents. Secondly, the data objects also include other individuals or organizations in the community where community residents live, such as other residents, community neighborhood committees, community property, and community social organizations also belong to the analysis scope of data information. Finally, and most importantly, it is the method of using data by data objects. Big data is a good way to achieve it. With more and more public participation, big data adds a way to fully participate in decision-making. “Open big data” advocates that some types of data should be easy to spread so that they can be reused, analyzed, and transformed into new and useful products. Communities also need to obtain cross system data in order to better serve the target population, such as vulnerable adolescents, homeless, poor children, and so on. Big data brings people not only an era of information sharing but also an era of open data information. All kinds of data information flow in real time through the big data platform. It makes the establishment and development of social work archives more information-based, electronic and convenient, avoids the clutter of traditional social work archives management, avoids the lack of large occupation of physical space in the storage of traditional social work archives, and makes the extraction and browsing of archives more robust. The particle size treatment and density test are carried out, as shown in Figure 9.

Big data on the Internet allows for the real-time acquisition and updating of real human behavior data, eliminating the need for subjective reports from subjects during the data collection process and effectively explaining or revealing the continuously changing trend of group psychological characteristics, and allowing for a better understanding of society’s pulse. The IEA mechanism and the traditional 3C PA mechanism both use a simple queue processing mechanism. The granularity of latecomers will have to wait for the next time period to be served once the current queue is congested due to limited processing capacity, so the granularity loss degree is higher than that of this algorithm. The granularity loss test of each algorithm is shown in Figure 10.

Social work as a profession has developed for hundreds of years. The wisdom and experience of social work condensed by the discipline itself is the summary and improvement of countless practical experiences of social workers. Social work, as a profession serving people, the subject of service is people, and the subject being served is also people. Trying to apply big data technology to social work is just taking it as a means to help social workers be more targeted, accurate, and preventive when serving the objects in need. The ultimate goal is to serve the people in need. Based on big data, we can have a more accurate and intuitive grasp of the temporal and spatial distribution of service population and basic social service facilities.

5. Conclusions

For social work research and practice, big data offers new opportunities and challenges. The use of big data to open up new avenues for achieving social work’s professional goals is a promising research area. The use of big data technology in social work is unquestionably a new venture that will contribute to the advancement of community social work in a unique way. However, in the face of this new technology, we must remain vigilant and take precautions to avoid potential problems. In China, the process of professionalizing social work has a distinct historical context. It is a strategic decision based on social practice’s requirements. It reflects the changes in society and people’s lifestyles. It is also a powerful tool for addressing and resolving social inequity. It is possible to forecast the future using social work archives. All of the archives for social work have been gathered in one place. We can be used for social work theoretical research, practice guidance, and problem discovery. Its allure lies in its ability to foresee the future. The allure of the big data era is that it improves the accuracy with which problems are analyzed, solved, and forecasted. Our analysis of theoretical and practical social work problems is aided by having a comprehensive social work file. We can better predict future social work theoretical and practical problems based on our understanding of practical problems, allowing us to make better future plans. This paper expounds the specific contents of the professionalization of social work, which is different from those of predecessors. It holds that the professionalization of social work
is composed of four complementary aspects: the professionalization of social workers, the specialization of social work practice, the institutionalization of social work institutions, and the normalization of social work functions.

Data Availability

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

Conflicts of Interest

The authors do not have any possible conflicts of interest.

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