

Research on Intelligent City Talent Information Fusion Management and Talent Training System Optimization Based on Data Mining

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Objectives: Smart city is the product of a new round of information technology reform and the further development of knowledge economy. It is a manifestation of the deep integration of industrialization, urbanization and informatization and the progress towards a higher stage. The standardization of smart city construction must be combined with the reality of smart city construction and carry out the standardization work pertinently. Intelligent city construction is accelerating step by step. Internet technology, mobile communication technology and intelligent terminals are combined to infiltrate into all areas of social life. This paper makes full use of the concepts and technological achievements of smart city construction. From the aspects of data regulation and results building, conflict detection and contradiction coordination, results management and resource sharing. Research on the construction of multi-information information fusion visualization system for sharing, unified, efficient and dynamic updating. The open big data teaching mode is used to conduct theoretical study and practical exercises online. Let learners master the necessary knowledge and skills as soon as possible, and provide sufficient and excellent big data talents for enterprises in a timely manner.

Keywords: intelligent city; economic development; talent training

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Smart city is the product of a new round of information technology reform and the further development of knowledge economy. It is a manifestation of the deep integration of industrialization, urbanization and informatization and the progress to a higher stage.¹ It is also a new trend of development from informatization and digitalization to networking and intellectualization on the basis of the construction of digital city. First, the regional development is not balanced and there is a lack of substantive cooperation among regions.² Talents work and employment work still need to be further integrated. It is urgent to carry out unified planning and construction of public

employment personnel service information system. At present, the labor employment network and the talent network in most small and medium-sized cities are independent of each other, and the job registration overlaps seriously.³ The construction of smart city needs a large number of smart talents, which is also the focus of smart city construction. In the process of building a smart city, facing the problem of cultivating smart talents, it is clearly put forward that the development of universities is crucial to the construction of a smart city and to the promotion of the city's competitiveness.⁴ Under the background of the vigorous promotion of smart city construction, the construction achievements

of smart city public information platform and geographic information public service platform provide an opportunity for information sharing and integration among different planning departments.⁵ The important starting point for the construction of smart cities is to further promote informationization, and talents are an important factor in promoting the construction of smart cities.⁶

The pace of building smart cities is gradually accelerating, and Internet technology is combined with mobile communication technologies and intelligent terminals, and it has penetrated into various fields of social life.⁷ Network mobilization, industry digitalization, information transparency, cloudization, and big data impact people's vision and change people's production and lifestyle. With the acceleration of China's urbanization process, the trend of population and resources to urban concentration has become increasingly apparent. Leading to excessive urban population expansion. The pressure on the development and management of public utilities such as transportation, food, environment, education, employment, and security has gradually increased.⁸ The information technology is generally backward, and the original personnel department lacks special fund support. After the merger with the labor department, the business needs to be further integrated. Higher education institutions are the main departments for talent training.⁹ How to train college students who have undergone nine-year compulsory education and three-year cramming high school education to meet the requirements of smart city construction? It is a problem that university leaders and teachers need to solve.¹⁰ This paper is based on data mining technology, from a professional point of view. From the beginning of students' enrollment, professional teachers take the lead and adopt multi-year students to form a learning echelon. Jointly complete the form of task projects with certain professional and technological level, and carry out targeted training of intelligent professionals.

The construction of smart cities requires that smart people have the ability of independent learning. In order to meet the challenges of urban

development, expand urban carrying capacity and better meet people's production and living needs.¹¹ As a new form of urban development, smart city is gradually becoming the first choice of the development model of major cities. The promotion and construction of "multi-conformity" in all parts of the country have been carried out in an all-round way.¹² General Secretary Xi Jinping and Premier Li Keqiang proposed on many important occasions, such as the Central Conference on Urbanization: to establish a unified spatial planning system, to limit the boundaries of urban development, and to delineate the red line of urban ecology. Actively adapt to the needs of smart city construction and development in the era of big data.¹³ Innovating and optimizing talent information services and intelligently solving the contradiction between supply and demand of talents is the key to doing a good job in current talent work. The construction of smart cities has risen to the level of national economy and science and technology, and various regions have successively launched "smart city" development strategies and intensified efforts to organize implementation.¹⁴ This paper proposes a new talent training model to improve the self-learning ability, ability to discover and solve problems, and innovation ability of contemporary college students. Avoid the spatial differences between the planning basemaps of different departments, and guide the technical integration and coordination of various departments.

In this article, we propose a talent information management and training system optimization algorithm based on data mining technology. This algorithm is a new algorithm for talent information fusion management and talent training system optimization.

In summary, our contributions are as follow:

- a. Data mining technology is the process of extracting hidden and potentially useful information and knowledge from a large number of incomplete, fuzzy and random data.
- b. This paper proposes a talent information management and training system optimization algorithm based on data mining technology.
- c. It can circumvent the spatial differences of the

planning basemaps of different departments and guide the technical integration and coordination of various departments. Visualization is even better during the operation.

METHODS

In the West, Heraclitus first used the word "wisdom". He said: "Wisdom lies in telling the truth and acting in accordance with nature, listening to the words of nature." "Wisdom lies only in one thing, that is, knowing that it is good at controlling everything" the idea.¹⁵ From the perspective of social and historical processes, the development of the city is closely related to the evolution of human wisdom. Aristotle once said that human beings "to live in the city and live in the city for a better life."¹⁶ The Ministry of Human Resources and Social Security's "Guiding Opinions on Promoting the Informationization of Public Employment Services" and the National Human Resources Service Standards have extensive guidance.¹⁷

In Carlos E, the definition and classification of various "smart cities" concepts are finally defined as smart cities: smart cities are based on the life attributes of cities.¹⁸ With the use of next-generation information technology as the basic means, the basic approach of urban operation with comprehensive perception, deep integration and intelligent collaboration. In 1999, an international conference in San Francisco, California, explored the city's experience of aggregating "wisdom" through information technology to form sustainable urban competitiveness with the theme of "Smart City, Fast System, Global Network".¹⁹

The talent development model does not allow students to clarify their learning goals. For students, in the high school stage, the goal of "taking the university" has been deeply rooted in the hearts of the people. An important part of the research and demonstration of smart city top-level design management and multi-regulation information fusion technology is to study the construction and practice of multi-integration visualization system in the context of smart city. The information provided by the existing talent information service platform is relatively static, and it is impossible to collect and process large amounts of data in time. It is even more difficult

to provide dynamic information services, and it is difficult to achieve true "transparency" between talents and managers. Smart cities are characterized by digitalization, networking, intelligence, interaction, and synergy at the technical level. In particular, the level of interconnection and interoperability of urban systems is very high.²⁰ At the social, economic, cultural and educational levels, people-oriented sustainable innovation is emphasized. The development of the information society has promoted revolutionary changes in the field of science and technology.²¹ Automatic recognition, sensors, remote sensing, wireless transmission and other sensing technologies are widely used in production and life. This directly promotes the comprehensive perception and interconnection of people and people, people and things, and things and things in smart cities. Figure 1 is the start-up meeting of an information fusion management system construction project kick-off meeting.

Figure 1
information integration management system
construction project kick-off meeting



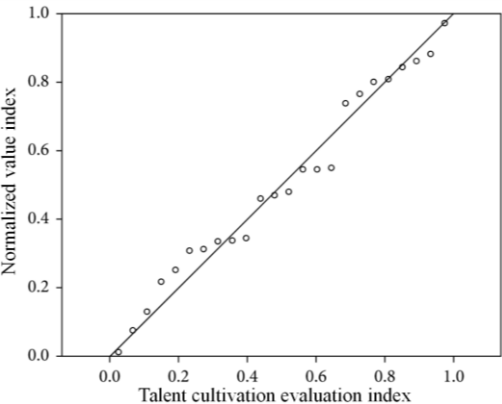
Information fusion People management education is based on the actual needs of human development and social development. After the influencing factors have been uniformly measured to the four-point system, in order to better study the impact of price competition on various factors, the argumentation part adopts the idea of normalization of price competition. The talent training assessment is divided into six sections. The specific division is shown in Table 1. The relationship between normalized value and talent development assessment is shown in Figure 2.

Table 1
Talent Cultivation Assessment Submission Table

Talent training evaluation	0-15	15-30	30-45	45-60	60-75
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parameters					
Normalized value	0.15	0.3	0.45	0.6	0.75

Figure 2
relationship between normalized value and talent development assessment



Set goals and implement them step by step. Promoting the informationization of public employment talents is a systematic project. The formulation of public employment talent informationization goals should be integrated into talent planning. Combine the local economic development status and industrial structure, and rationally formulate long-term development goals. In the face of a large number of homework assignments and various review papers, high school students learn a lot. But after entering the university, for what to learn, no one mentioned it to the students. Work and society seem to be too far away from college students, and students lack a clear understanding of the life after college. The multi-information information fusion visualization system is an important means to solve and support the implementation of "multi-regulation" through informationization in the context of smart cities. The number of talents, educational background structure, educational background structure, age structure, Title structure, job performance and other data provided by the website remain basically unchanged in a certain period of time. Failure to achieve dynamic updates, but in fact, the above information and the employer needs of enterprises are changing at all times, and a large amount of

data has been generated. We need to constantly explore and accumulate experience in construction. Figure 3 is the network structure system of talent information fusion management.

Figure 3
talent information integration management network structure system



To measure the information fusion management and talent system development of a certain company, you can simply write the degree of information integration management competition of a single company as:

$$AE_i = ES_i / S_i = \sum_j (1 - \sum_q p_{iq} m_{jq}) / \sum_j \quad (1)$$

Initialize, calculate the connection weight and threshold, and assign any value:

$$CI_i = \frac{\sum_j (\frac{C_{ij}}{C/N}) \ln(\frac{C_{ij}}{C/N})}{N \ln(N)} \quad (2)$$

The system framework is designed according to the four main levels of infrastructure layer, data layer, platform layer and application layer. Provide input samples and expected output:

$$P_i = \frac{f_i}{\sum_{i=1}^N f_i} \quad (3)$$

According to the survey data, in the past three years of corporate recruitment, online recruitment channels are superior to traditional recruitment channels. The number of new recruitment channels on the mobile side has steadily increased. The proportion of recruitment websites far exceeds the proportion of job fairs, and it is increasing year by year. The 2018 enterprise talent introduction

channels accounted for as shown in Table 2.

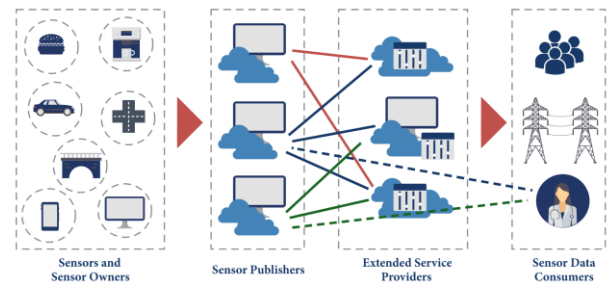
Table 2
Proportion of enterprise talent introduction channels

Introduction channel	Proportion(%)
Industry professional recruitment website	62.9
Comprehensive online recruitment	51.6
Outsourcing headhunting	47.1
Campus Recruiting	42.9
Talent Market	33.4
social media	27.6

The construction of smart cities involves many fields, and different fields have their own characteristics. How to minimize the horizontal differences between the various fields. Build a shared, shared basic technology framework, application and service platform. Realize resource integration and business collaboration. These are the most urgent issues that need to be solved. The technological revolution and innovation have become a crucial breakthrough point for the Internet industry to re-emerge and break through the economic crisis. Seizing the commanding heights of technological innovation, developing strategic high-tech industries, and getting rid of the economic crisis have become the direct incentives for the rise of smart cities. The traditional talent training model cannot fully stimulate students' initiative. The cramming high school teaching has made some students form a habit of passively accepting the content of the teacher's classroom teaching. Do a good job in the development of business management software for talent service. On the premise of following the unified index system of the whole country, we

should do a good job of localization in expanding functions according to local conditions. Establish the working mechanism of cross-regional information interconnection and interoperability. Breakthrough their own and regional constraints, and establish and improve information public service platform on the basis of the realization of synchronous information networking in various places. Connect with different places and provide inquiry service for all kinds of workers and public employment personnel service institutions. Figure 4 is a perceptual service model for information fusion management.

Figure 4
perceptual service model



In the learning echelon, the teacher assigns extracurricular professional project tasks to senior students, and the upper grade students assign lower-level tasks to lower grade students. In this process, students' self-learning ability is improved, and students' ability to find problems and solve problems is exercised. Many college teachers' knowledge in the curriculum field has the problem of narrow concept and insufficient understanding of the new curriculum. Lack of understanding of the current status and trends of the talent training curriculum reform. Table 3 is a survey of the field of teacher information fusion management courses.

Table 3
Survey of teacher information integration management curriculum

	Curriculum view	Course resources	Course implementation	Course evaluation	Course reform
The average score	7	8	7	6	5
Correct rate(%)	64.2	59.8	62.8	51.9	61.2

Explore the ways and strategies of “multi-integration” information fusion, sharing and visualization in the context of smart city

construction. Based on a unified multi-protocol technology standard and working mechanism. Standardization activities can be used to refine commonality and optimize combinations based on

analysis and integration of intelligent transportation, application standards, safety standards, and management standards. Construct a technical, application, and service standardization system for smart city construction. With the acceleration of urbanization, various social contradictions in China's urban development have become increasingly prominent. Economic development transformation and industrial restructuring are an important path for cities to seek development. Based on the employer, all kinds of talents such as business management talents, professional and technical talents, skilled talents, social work talents, and e-commerce talents are included in the collection scope.²² In order to solve the problem of lacking a reference and effective technical framework for the construction of multi-disciplinary integration platform under the background of smart city. Intelligent city is a new mode of urban development that comes into being to meet the needs of urban development at this stage.

It provides an effective reference for the construction of "multi-disciplinary integration" platform in cities throughout the country. It makes it possible for smart cities to achieve the goal of intelligent management in the fields of population, industry and public services. Calculate the average value of each cycle as shown in the formula:

$$Y_j(t) = \phi \left(\sum_{i=1}^n w_{ji} x_i - \theta_j \right) \quad (4)$$

The actual output of each unit in the output layer is calculated.

$$o_j(t) = f \left(\left[\sum_{i=1}^n w_{ij} x_i(t - \tau_{ij}) \right] - T_{ij} \right) \quad (5)$$

Fix connection weights and thresholds:

$$S(\tau, f) = \int_{-\infty}^{+\infty} h(t) \omega(\tau - t) e^{-i2\pi f t} dt \quad (6)$$

The city contains two aspects. That is, the gathering place of the population and the place where the goods are exchanged. Calculate the average increment and initial exponential smoothing value for each period in two cycles as shown in the formula:

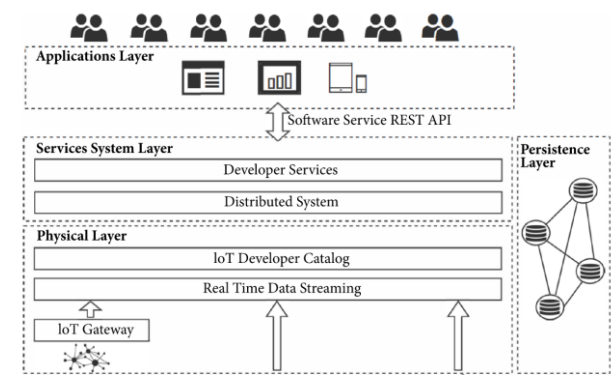
$$y_{f-n_m} = \sum_{i=1, i \neq n}^N \sum_{l=1}^M \sqrt{p_{li}} h_{li}^T \mathbf{W}_{i,li} s_{li} \quad (7)$$

RESULTS

Today's competition in social economy and technology is not only the competition for the quantity and structure of talents, but also the competition for talent innovation and creativity. Establish resource integration and sharing mechanisms for graduate employment information, and strive to achieve graduate employment network services and network management, not only serve college graduates, but also find out the bottom and improve management. Big data talents need to have excellent data processing capabilities, data analysis capabilities, data visualization capabilities, and data visualization capabilities. The training of big data talents is a systematic project. In addition to scientific talent demand forecasting, it is necessary to carry out corresponding training and training for job requirements. In the process of establishing the visualization system of multi-dimensional information fusion, the collection, processing and fusion of multi-dimensional data is an indispensable step.

The core of a smart city is a more intelligent way to utilize the new generation of information technology with the Internet of Things, cloud computing and so on as the core. To change the way governments, businesses and people interact with each other. To respond quickly and intelligently to various needs, including people's livelihood, environmental protection, public safety, urban services, industrial and commercial activities, so as to improve the efficiency of urban operation and create a better urban life for residents. From the perspective of information technology, the aim is to achieve the goal of efficient, accurate and convenient operation of the city by building a perfect and advanced intelligent system. Figure 5 is the architecture of the system.

Figure 5
smart city system architecture



Based on unified standards and working mechanisms, the relationship between multi-level data from various departments and existing information resources in smart cities is studied. Establish a multi-discipline data directory system. Calculate the output of each unit in the hidden layer:

$$P_{f-n_m} = \sum_{i=1, i \neq n}^N \sum_{l=1}^M p_{li} \left\| \mathbf{h}_{i,n_m}^T \mathbf{w}_{i,li} \right\|_2^2 \quad (8)$$

According to the mathematical idea, the relevant data is obtained to describe in detail how the information gain is obtained:

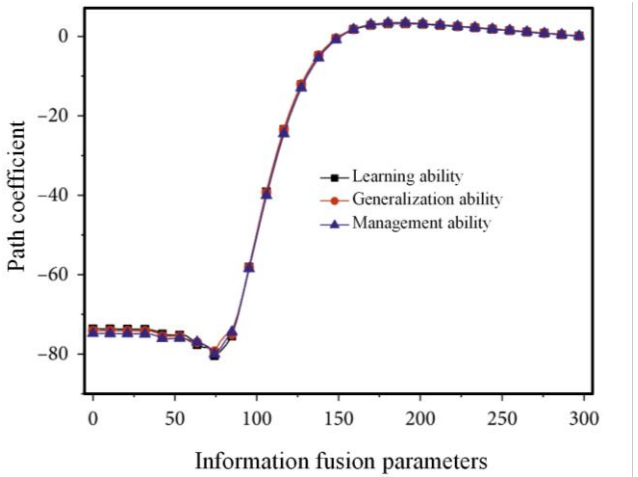
$$cell_{ps-n_s} = \arg \max_{n, n \neq cell_{ps-1}, L, cell_{ps-(n_s-1)}} \left(\sum_{m=1}^M P_{f-n_m} \right) \quad (9)$$

The primary technical goal of smart city construction is to solve the problems of “information islands” and low-level redundant construction of segmentation. This is also the basis for realizing the “comprehensive perception and intelligent collaboration” of smart cities. Table 4 shows the structural parameter estimation and significance test of the smart city information fusion index. The information fusion parameter value and path relationship are shown in Figure 6.

Table 4
Information fusion parameter estimation and significance test

Path description	Fusion parameter	Path coefficient
Learning ability	5.64	5.74
Promotion ability	4.23	4.19
Management ability	7.31	4.51

Figure 6
information fusion parameters and path relationships



Building a smart city requires not only investing more energy and resources in informatization and intelligence, but also grasping the key element of talent cultivation.²³ Because talent is a resource with high value-added and liquidity, it is the basis of technological innovation and wisdom. Gradually establish a regional and even the national employment service platform for college graduates, and realize the full informationization of employment services and employment management. In the echelon of learning, students with high levels will become the backbone of the team. They can help and help students with low levels to complete routine learning tasks and extracurricular learning tasks. Applying network interconnection technology, we will create a platform for big data talent education and competition services. It integrates real topic training, case analysis, theoretical improvement and skill negotiation. Through the research on the concrete methods of multi-gauge data system construction, multi-gauge data collection, multi-gauge data integration and processing, multi-gauge database construction and storage. Form a multi-routine information fusion solution that integrates building, managing, using and enjoying the whole process. To meet the specific implementation requirements of multi-gauge data collection, processing and fusion, as well as the application of multi-gauge information fusion visualization system. For example, Table 5 is a survey and statistics of the degree to which curriculum teaching achieves the educational objectives of

information fusion speech management.

Table 5

**Survey on the Education Objectives of
Information Fusion Speech Management in
Teaching**

Degree of realization	Fully realized	Partial realization	Not implemented
Selected number	12	31	27
Proportion (%)	17.1	44.3	35.6

Standardization plays an important role in standardization, especially in technical standards. There are clear boundaries between "smart city" and those cities named "digital city" and "smart city". On the basis of making full use of information and communication technology, it pays more attention to the value of city for human existence and the significance of everyone for city. From the current situation of the construction of smart cities, the government spares no effort to co-ordinate and allocate various resources to support the construction of smart cities. Every year, a lot of manpower, material and financial resources are invested in the network architecture and hardware transformation. It is not long before the concept of intelligent city is put forward and the construction practice is carried out. It belongs to a new concept of development and embodies the function of self-innovation. Its essence is the tremendous changes in the mode of production, lifestyle, mobility and public services. Explore new ways of talent service network business development. Build a diversified public employment personnel service information platform. Actively develop new information service methods and establish a human resources SMS service platform. Deliver valuable and fully utilized results from the pilot into standard specifications in a timely manner. Form a standardized working model for smart city construction, and promote demonstration pilots to be carried out in a broader and deeper field.

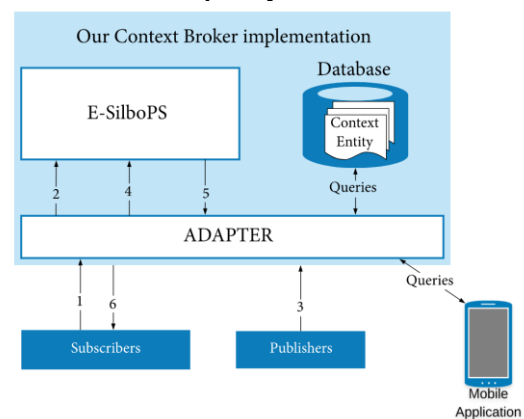
Due to factors such as imbalances in regional economic development, industry differences in industries, and regional differences in pay, talent mobility is high. Finding a job online has become an important choice. Talent Network plays an increasingly important role in job hunting.

Existing talent websites have problems such as geographical differences, relatively independent information sharing, untimely information updates, and difficulty in achieving one-stop services. They are not able to meet new demands well. It is urgent to integrate resources, innovate service modes and optimize functions of talent websites. Financial support and technological upgrading. The basic guarantee for the smooth implementation of informatization is to increase the investment of informatization funds for public employment personnel, update the technological level of informatization construction and improve the quality of professionals. Increase the investment of special funds for employment in the construction of public employment service informatization, including computer and network hardware, software acquisition, and development and application expenditure, and incorporate the system maintenance funds into the budget at the same level. Figure 7 is the architecture of talent information construction.

Figure 7

talent information construction architecture

The level of development of a city depends on the level of social and economic development, and it reflects the stock of material wealth in a certain society. Calculate the degree of information fusion per cycle:



The level of development of a city depends on the level of social and economic development, and it reflects the stock of material wealth in a certain society. Calculate the degree of information fusion per cycle:

$$\mu_{s,d} = \frac{1}{MN} \sum_{m=1}^M \sum_{n=1}^N |W_{s,d}(m,n)| \quad (10)$$

The standardization of smart city construction must be combined with the actual construction of smart cities. In particular, the specific content of smart city construction should be subdivided according to different development modes and advantageous areas of each city, and standardization work should be carried out in a targeted manner. Calculating information gain is the most common method. In the formula for calculating the information gain, the information gain degree:

$$\sigma_{s,d} = \left[\frac{1}{MN} \sum_{m=1}^M \sum_{n=1}^N \|W_{s,d}(m,n) - \mu_{s,d}\|^2 \right]^{1/2} \quad (11)$$

$$M(w) = \frac{w}{D} R_{ON} + (1 - \frac{w}{D}) R_{OFF} \quad (12)$$

If information technology provides technical possibilities for the construction of smart cities, then individual information technologies cannot solve all the problems of building smart cities. In terms of structure, it includes infrastructure, information resources, application services, security systems, institutional mechanisms, and standard specifications. It also includes economic, social, cultural, political, and ecological fields. On the basis of establishing a multi-standard data system, the multi-standard data collected from various departments is integrated into the file format, coordinate system and storage form. Form a unified format, unified coordinates, unified storage form of base map data. And a series of data such as regularization, inspection, storage, verification and symbolization are built and stored. Open big data teaching mode is adopted to conduct theoretical study and practical exercises online. Let the learners grasp the necessary knowledge and skills as soon as possible, and provide sufficient and excellent big data talents for enterprises in time.

CONCLUSION

Speed up the training of standardized talents in smart cities. Time is running out, and the general lack of standardized talents has become a major obstacle to social and economic development. Under the background of vigorously building a smart city in China, the original talent training mode of higher education has not met the requirements of the new era. This paper makes

full use of the concepts and technological achievements of smart city construction. Starting with data regulation and result database, conflict detection and contradiction coordination, result management and resource sharing, which are the core of the construction of conventional information fusion visualization system. Research on the construction of multi-routine information fusion visualization system with sharing, unification, high efficiency and dynamic updating is carried out. The construction of smart cities has the characteristics of wide coverage and strong professionalism. It is necessary to increase financial input, use various resources to accelerate the pace of training, upgrade the level of training, and innovate the training mechanism for standardized personnel. The construction of smart cities needs to develop a number of emerging industries to support, and the development of emerging industries requires a group of talents with innovative spirit and innovative ability. It is necessary to build the selection, training, output and incentive mechanism of existing standardized talents in a timely manner based on the status quo of talents. A two-pronged approach, go hand in hand, thus achieving the talent guarantee of smart city standardization construction.

Human Subjects Approval Statement

This paper did not include human subjects.

Conflict of Interest Disclosure Statement

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