

Discrete Dynamic System Modeling of Vocal Music Performance Teaching Platform under Complex Big Data Environment

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Abstract—This paper studies the discrete dynamic system modeling of vocal music performance teaching platform based on the complex big data environment. The application of discrete dynamic system resource allocation system is a typical discrete event dynamic system. Music and its performance are always high-level activities that human beings are engaged in. Compared with language. The basic situation of the piano teaching software at the present stage is introduced, and a framework of the piano teaching software is designed. Then, the function of piano playing practice of "Ode to Joy" is realized, and the performance of the model is tested by using the neural network evaluation module to evaluate the performance of teachers and students. It can also be adjusted according to the students' problems in vocal practice.

Keywords—Discrete Dynamic System, Vocal Music Performance, Complex Big Data, Teaching Platform

I. INTRODUCTION

The guiding ideology of the internationalization major of mechanical engineering is to become a major with an international talent training level, and it is required to be in line with international standards in terms of teaching concepts, teaching contents, teaching platforms and methods. Professional colleges and higher normal colleges have resumed enrollment. Due to the influence of teachers, conditions and equipment, and the restriction of the national economic development level, although there are differences in personnel and conditions between higher normal colleges and professional colleges, a series of research results on the resource allocation system are largely dependent on the Rapid development of discrete event dynamic systems [1].

At present, the research on resource allocation system can be roughly divided into two main problems: system deadlock and optimization. The application of model-based deadlock avoidance in multi-process concurrent systems has been well developed. In recent years, the number of people who have the intention to learn piano performance has increased significantly, and people of all ages have lovers of piano performance. , the base for young children to learn to play the piano is the largest. In urban families of the middle class and above, one in every five families has parents who want their children to learn to play the piano.

The design of university management information system is mainly divided into system algorithm design, software design and hardware design. Among them, the algorithm design of university management information system mainly includes data mining algorithm, database access algorithm and resource information for university management related information. Scheduling algorithm, etc. In the production of printing and dyeing enterprises, the allocation of dye tank resources of an order refers to the process of dividing the order before the dyeing process, and then arranging it to specific dye tank equipment for production. On the basis of ensuring the

smooth processing of the order, scientific and reasonable allocation of dye vat resources is carried out, so that the resource utilization rate of the dye vat is as high as possible, and the order is processed as quickly as possible.

From the perspective of the specific practice of international mechanical engineering education, dynamic system modeling and control have almost become the core basic courses of mechanical engineering. This course addresses students' ability to model, analyze and control electromechanical dynamic systems, especially relying on advanced software platforms. The setting of this teaching goal determines that from the arrangement of teaching content to the setting of teaching process in the teaching of vocal music in higher normal schools, it is to implement and implement the training plan and teaching goals, and take it as the starting point and purpose. Therefore, its teaching can only and inevitable. Taking professional colleges as a reference, at least the classroom teaching of professional teachers is like this. Li Zhiwu et al. [4] and Tricas et al. [5] designed control monitors based on Siphon theory to avoid deadlock problems in flexible manufacturing systems. Guo Tao et al. [6] and Sampath et al. [7] proposed that when the control specification in the resource allocation system changes, the method of mathematical programming is used to design the resource reconfiguration controller in the Petri net model.

The cost of piano education is very expensive, and the minimum cost of buying an ordinary piano is more than 10,000 yuan. The piano teaching adopts the one-to-one teaching method of teachers and students. At the same time, due to the scarcity of piano teachers, the tuition fee for each piano lesson is between 100 and 400 yuan. Among them, the literature [4] proposes a design method of university management information system under the Internet of Things based on the adaptive scheduling of university scientific research information resources. To realize the self-adaptive scheduling control of information resources in colleges and universities, firstly, the processing can be successfully completed by performing a limited number of full-load work through several dye vats with different vats; second, through a limited number of dye vats with different vats A full-load job and a full-load dye vat of a certain size can be done with a full-load job.

II. THE PROPOSED METHODOLOGY

A. Complex Big Data Environment

In order to meet the requirements of the internationalized professional construction of mechanical engineering, and also take into account the construction of electromechanical control courses such as system simulation and modeling (Dynamic System Modeling, Control and Analysis), it focuses on the structure and overall arrangement of the internationalized course of "mechanical engineering". A period of research, analysis and thinking. A discrete event dynamic system refers to a type of dynamic system in which the state of the system evolves due to the interaction of asynchronous and sudden

events according to certain operating rules. man-made systems to meet some needs set by humans [9].

It belongs to a higher level of human communication. It is a bridge between people to express their emotions. When listening to a song, the audience can understand the connotation of the song and can resonate with the author's emotions. As the process of this emotional transmission, "playing" plays a vital role.

$$n = n_{ie} \exp \left[\frac{q(\Psi - \phi_n)}{kT_L} \right] \quad (1)$$

$$Q(\theta, \theta^{old}) = \sum_Z p(Z|X, \theta^{old}) \ln p(X, Z|\theta) \quad (2)$$

A good player can experience the emotion of music. In view of the above problems of integrating the operation and control of the software system into a unified framework and the communication module, this paper proposes a random connection between embedded JTAG and embedded STM32 based on multi-feature data mining and embedded JTAG. , the host uses 232 string I: 1, network cable, Linux kernel university management information system design method.

First of all, the human-computer communication and data exchange are realized through the embedded USB cable connection, and the overall design and file allocation of the university management information system are carried out in the core unit of the human-computer interaction module Linux, which provides a popular visual operation interface. , to analyze the functional modules of the system and describe the technical indicators. Throughout the development of the international mechanical engineering profession, its primary feature is that it reflects more interdisciplinary subjects. The mechanical system involves electronic power, hydraulics, thermodynamics and control, especially the more The wider and deeper the inclusion into the mechanical system.

In my country's undergraduate teaching, control engineering is often an independent subject. Compared with the undergraduate group, the specialist group's discussion of reform has a wider range of topics and more specific and distinct views. Looking back now, it can be seen that the professional level faced the problem of vocal music reform earlier, and their situation at that time was more similar to the current situation, such as the problem of teacher-student ratio.

B. Vocal Performance Teaching Platform

They are relatively less bound by the forces of traditional habits. However, in future work, when it comes to multidisciplinary mechanical systems, especially the design of control systems, it shows that there is a lack of dynamic large system concepts and dynamic system control knowledge points. Can not fully adapt to the requirements of mechanical engineering and can not maintain the core competitiveness of students in the future.

$$w_{ij} = \exp \left(- \frac{\|f_i - f_j\|^2}{2\sigma^2} \right) \quad (3)$$

$$x = As \quad (4)$$

Dye vat resource allocation system is a common discrete event dynamic system. Here, an automaton will be used to establish a mathematical model for the dye vat resource allocation system. In the model, the various production methods of the order can be represented by the state transition diagram of the automaton. However, when multiple tones are combined together, in a certain rhythm, they can express a

beautiful music, and the sound is matched when playing. The quality of the grasp of factors such as chords, melody, etc. has become the basis for judging whether a piece of music is pleasant. On the other hand, these characteristics directly reflect the emotional characteristics of music.

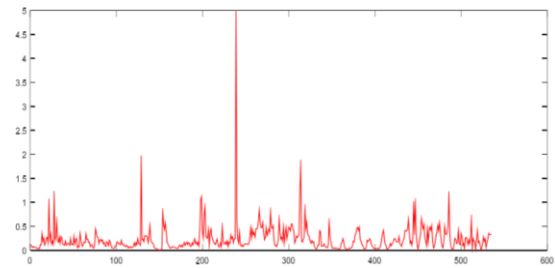


Fig. 1. Vocal Performance Teaching Platform

In order to realize the design of university management information system and the development and optimization of university resource information mining software, the overall structure model of university management information system is firstly analyzed. On the basis of loading the embedded program, the VXI bus technology is used to collect the management information data in colleges and universities. The dynamic system modeling and control platform is essentially composed of a series of equipment, which supports teachers' theoretical teaching and students' hands-on experiments and analysis. In music education, vocal music is a compulsory course, and its importance is beyond doubt.

C. Discrete Dynamic System Modeling of Vocal Music Performance Teaching Platform

But for many years, the teaching of vocal music in normal colleges has been mainly carried out in the form of small lessons, that is, a vocal music teacher organizes teaching for several fixed students according to a certain teaching plan. With this teaching model, if students encounter methodological, highly skilled and experienced teachers, they tend to improve their vocal skills quickly. It includes computer system (including hardware and software), complete sets of teaching and experiment equipment, testing equipment, power supply system, etc., which will mainly support engineering innovation design in the whole process. In the automaton model of the dye vat resource allocation system, it is necessary to define the rules of order vat arrangement first: When the quality of the order cannot be processed by a single dye vat, it is necessary to split the order.

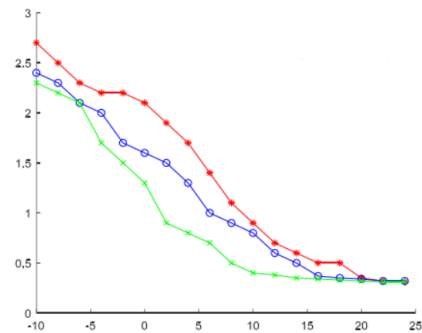


Fig.2. Discrete Dynamic System Modeling

That is, one part can work with certain dye vats at full load for a limited number of times, and the other part can work once with a certain dye vat under full load. The training of the transmission network neural network is very fast, but its performance determines its application scope is very narrow, non-deterministic algorithm. The training speed of the BP neural network is very slow, but it can avoid the minimum value problem. The comprehensive characteristics of the BP neural network in this system are better than other algorithms,

and there are already very mature applications. Therefore, this music performance evaluation system plans to use BP neural network. Network model construction. This paper studies the optimal allocation of dye tank resources for orders in a printing and dyeing textile company in Jinjiang, Fujian.

This study is the resource allocation of dye vats for orders under static conditions. The so-called static situation refers to the information of the order, the information of the dyeing tank equipment, etc. are given before the dye vat configuration of the order, and the management information department of the university will not change during the whole configuration process through the guide program. (BootLoader) Build the Linux kernel, and realize the improvement design of the university management information system based on data mining in the file system and application loading. According to the overall design idea of the above system, the overall structure model of the university management information system is constructed.

CONCLUSION

The discrete modeling of the vocal music classroom performance teaching platform has changed the traditional teaching methods of vocal music performance in the past, and achieved the effect of mutual integration and mutual learning. It not only enhances the fun of learning, but also consolidates the knowledge learned. Of course, this interactive teaching method should pay attention to grasping the time in the limited face-to-face time, so as not to affect the teacher's teaching progress. Related to this, this teaching method requires teachers to master the art of classroom teaching, which puts forward higher requirements for teachers, and also plays an important role in promoting teachers' teaching ability and teaching level.

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