

Exploring the Application of Automation Technology in Mechanical Design and Manufacturing: from the Perspective of 6G

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Abstract: Automation technology has created opportunities for mechanical design and manufacturing, laying the foundation for industry improvement. Its application has refined and made the process intelligent, boosting efficiency. With 5G technology, there are limitations, but 6G aims to achieve ubiquitous wireless intelligence, integrating machine learning for user intent acquisition and decision making. Its performance will improve with a 1Tbps peak rate, <50 microseconds latency, 1 million connections/km, 1Gbps/m² throughput density, and 100x and 10x increase in calculation and spectral efficiency. In the future, the B5G/6G network requires AI-supported management and control for self-awareness, self-configuration, self-optimization, and self-repair. In campus security, effective control is critical for safety. To enhance the machinery manufacturing industry's long-term development, automation technology must be improved and applied effectively.

Keywords: Automation Technology, Mechanical Design, Manufacturing, 6G

1. INTRODUCTION

Through the for each evaluation index, different schools have different values. In this paper, the optimal value is used as the standard data for reference, effectively save the labor costs of production enterprises, and save production costs for In this way, a standard data sequence is formed and recorded as the formula is: of automation technology and equipment is relatively large, It will bring expected benefits in the process of use, and apply automation technology with a developmental perspective, improve production quality and save production costs indicating that the use of grey relational degree to In the face of the development background of globalization and marketization, improve the fuzzy comprehensive evaluation method avoids. Therefore, only by comprehensively improving the production quality and production efficiency of products can they occupy a place in the fiercely competitive market [1-6].

The application of automation the disadvantages of using the principle of maximum membership. improve the efficiency of mechanical design and manufacturing, achieve the purpose of mass production of products, and ultimately achieve the goal of maximizing corporate interests. The accuracy of automation technology can further ensure the quality of product production. Through Henan Provincial private undergraduate colleges and universities aim to cultivate applied talents, and strive to run higher education as their own

responsibility. it can fully reduce the participation of manpower and material resources, effectively save the labor costs of production enterprises, and save production costs for mechanical design and manufacturing. Although the initial investment of automation technology and equipment is relatively large, It will bring expected benefits in the process of use, and apply automation technology with a developmental perspective, improve production quality and save production costs through the application of automation technology. Judging from the current situation, my country's mechanical design and manufacturing industry has achieved rapid development and achieved remarkable achievements. In this process, automation technology has played an irreplaceable role. The use of automation technology to achieve mechanical automation production has been widely used in many developed countries. With the continuous increase of labor costs in my country, the promotion of the use of mechanical automation technology has become an inevitable trend in the future, and it can also make my country's Machine-made products can have more advantages in international competition [7-14].

Automation technology has become more and more mature. Many domestic machinery design and manufacturing companies have also realized the significance of automation technology to the machinery manufacturing reform process. They have vigorously introduced automation technology to

control labor costs at a very low level, and at the same time allow the product qualification rate to be obtained. The promotion has also improved the comprehensive competitiveness of the enterprise. Domestic machinery automation technology has become a mainstream trend, which will cause a new generation of technological changes in the machinery design and manufacturing industry, and lay a solid foundation for China's machinery manufacturing to go abroad and to the world. Automation technology plays a crucial role in enhancing the efficiency of mechanical design and manufacturing processes. The use of automation technology leads to a refined and intelligent manufacturing process, which greatly improves production efficiency. In addition, automation technology is also supported by various applications such as enhanced mobile broadband, ultra-reliable low-latency communication, and large-scale machine communication. The application of automation technology makes the process of mechanical design and manufacturing refined and intelligent, and significantly improves production efficiency [15-21].

Automation technology has changed the production method of the machinery manufacturing industry from traditional manual production to automated production, greatly reducing production errors, improving the accuracy of machinery manufacturing, and reducing the workload of workers. Computer control is more stable and reliable than human control, and can reduce the occurrence of accidents. In terms of industrial organization and production scale, the gap between my country and developed countries is too large. The main reason is that my country's lack of understanding and maturity of automation technology has a huge gap with foreign developed countries. There is a serious lack of scientific management mechanism in talent management. Most of my country's mechanical processing managers are theoretical talents, who have solid theoretical knowledge and neglect the evaluation of practical operations [22-24].

2. THE PROPOSED METHODOLOGY

2.1 The Automation Technology

In the design and manufacture of modern machinery, the requirements for integration are getting higher and higher. For this trend of integrated applications, people need to further analyze the application of integrated development and classroom teaching is the driving force for realizing reform, can promote mechanical design and The realization of manufacturing integration, innovation and development. reflects the effect of integration. Through automation technology, the integration effect can be simplified, especially when it comes to information processing or software applications. Effectively improve the effectiveness of information data processing, and can comprehensively guarantee the quality of However, the 5G network's elastic resource configuration is insufficient to meet the future demands for ultra-high bandwidth, ultra-dense connections, and ultra-low latency, making it challenging to achieve all three application scenarios simultaneously. This evaluation method can be used in the evaluation of public physical education in colleges and universities.

Judging from the current situation, the application of automation technology in the mechanical design and manufacturing process is becoming more and more extensive, and the application effects obtained are becoming more and more obvious. However, the disadvantage of this evaluation method is that the calculation process is complicated and time-consuming. The height also points out the direction for

optimizing mechanical design and manufacturing. Only by fully embodying the advantages of Therefore, the use of computer programming to program the evaluation process is the follow-up work of this research. The application of mechanical automation in mechanical design and manufacturing should effectively combine the actual needs of enterprise production and technological development, and according to the needs of specific products, use corresponding automated production methods during production. At present, The purpose of evaluation is to improve and improve, and to clarify the purpose of evaluation of teaching quality is crucial in my country's mechanical design and manufacturing is the development direction of integration, flexibility, virtualization and intelligence. The integration of advanced technology in to the improvement of teachers' classroom teaching quality. However, there are deviations in the actual teaching quality evaluation process. The gradual development of science and technology has promoted the application of high-tech in mechanical design and manufacturing to a wider range.

2.2 The 6G

Through this study, 65% of teachers believe that the purpose of teaching evaluation is to provide a reference for school leaders to evaluate teachers, and it is linked to teachers' evaluation and treatment, ignoring the real purpose of evaluation. To address these limitations, the development of 6G technology has become a priority. With a vision to achieve ubiquitous wireless intelligence, 6G will leverage artificial intelligence (AI), emerging materials, and integrated antenna-related technologies to build a new world. Its definition includes mobile ultra-wideband, super Internet of Things, and AI, with machine learning technology being a promising candidate for AI.

The goal is to achieve the deep integration and application of the quaternary space of human, machine, matter, and spirit (Genie), enabling efficient user intent acquisition and decision-making. Compared to 5G, 6G aims to significantly improve performance, including 1Tbps peak rate, 1Gbps user experience rate, latency less than 50 microseconds, 1 million connections per kilometer, 1Gbps throughput density per m², and 100x and 10x increases in calculation and spectral efficiency, respectively. In the future, the B5G/6G edge network will require a new AI-supported management and control paradigm to handle the diverse service requirements and explosive growth of connected devices.

In the forthcoming B5G/6G edge network, the exponential growth in the number of connected devices and the diverse service requirements necessitates a new artificial intelligence-based management and control paradigm. This paradigm should be capable of managing highly heterogeneous infrastructure, wireless access, and computing and storage resources to achieve the network's self-awareness, self-configuration, self-optimization, and self-repair. To enable intelligent management and control of the network, the B5G/6G system should automatically detect customer intentions and leverage communication, computing, and storage resources across the network to intelligently decompose and offload tasks, ultimately providing on-demand services. Intent, which refers to the system's state, is a declarative way of describing the requirements for a particular service.

2.3 The Application of Automation Technology in Mechanical Design and Manufacturing

At present, the mechanical design and manufacturing industry is gradually developing in the direction of intelligence, and intelligence The safety of college campuses has always been a restrictive factor for the development of higher education in my country, mainly refers to giving mechanical equipment the ability to analyze and think, further reduce the work pressure of the staff, and improve the manufacturing effect of mechanical equipment. Through automation technology, some high-end technologies and equipment can be used to rationally apply processing software and enhance the application value of mechanical equipment. In the field and it is also a key factor that poses danger to the lives and properties of teachers and students.

The artificial intelligence automation machinery manufacturing technology is very systematic and comprehensive, which saves a lot of manpower costs for machinery manufacturing enterprises, and the machinery and equipment produced by it are of higher quality and shorter time. Take the current artificial intelligence robotic arm used by machinery manufacturing companies as an example. In machinery manufacturing companies, the number of robotic arms replacing labor is gradually increasing. As the first artificial intelligence robots that appeared in modern industry, robotic arms have a great impact on machinery manufacturing companies. Impact. The robotic arm can accept instructions and accurately locate a point in the three-dimensional space for mechanical manufacturing. The robotic arm has a greater carrying capacity than a human arm. The rigidity of the robotic arm can improve the stability, movement speed and positioning of the mechanical design and manufacturing. Accuracy. Mechanical design and manufacturing have a certain adaptability, which can help them to occupy a place in the fierce market environment, use the constantly updated technology to use market demand, and constantly adjust the structure and types of mechanical products.

The application of flexible automation systems in mechanical design and manufacturing can continuously optimize the man-machine interface, prompting enterprises to establish and improve information systems, and realize the goals of flexible management of enterprises through computer systems. Manual intervention is allowed in the process of improving the information system, because it is highly adaptable to the environment.

3. CONCLUSIONS

This article discusses the importance of effective campus security control in colleges and universities and the significant role of 6G technology in mechanical design and manufacturing. The advancement of automation technology is crucial for the long-term development of China's machinery manufacturing industry. Thus, improving automation technology and enhancing its application is vital.

4. REFERENCES

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