

Research on the Path of Artificial Intelligence Empowering High-quality Economic Development

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Abstract: With the rapid development of science and technology, artificial intelligence (AI) has become a new driving force to promote economic and social development with its powerful capabilities of data processing, autonomous learning and decision support. This study analyzes the mechanism of AI promoting high-quality economic development, and discusses its specific implementation path, which provides useful guidance and suggestions for practice. It is found that AI has played a positive role in promoting high-quality economic development through its characteristics of permeability, synergy, substitution and creativity. The wide application of AI not only improves production efficiency and reduces operating costs, but also promotes the development of emerging industries and injects new vitality into economic growth. In order to effectively apply AI technology to empower high-quality economic development, this study puts forward some paths, such as strengthening basic research and key technology research and development, optimizing industrial development environment, deepening the integrated application of AI and traditional industries, and cultivating and expanding AI industry. In the concrete implementation, it is suggested that the government, enterprises and research institutions should make joint efforts to strengthen technology research and development, optimize the policy environment, and promote industrial integration and innovative application. At the same time, we should pay attention to the security and privacy protection of AI technology to ensure the sustainable development of technology.

1. Introduction

With the rapid development of science and technology, artificial intelligence (AI) has gradually become a hot field of global scientific and technological innovation, and it plays an increasingly important role in promoting economic and social development. At present, China's economy is in a critical period of transformation and upgrading, and the traditional development model has been difficult to meet the new requirements of high-quality development [1]. In this context, the rise of AI technology has injected new vitality into the high-quality economic development and become an important engine to promote economic innovation and improve efficiency.

With its powerful data processing ability, autonomous learning ability and decision support ability, AI is changing the operation mode of all walks of life [2]. It can not only improve production efficiency and reduce costs, but also optimize supply chain management, improve

customer service quality and create greater value for enterprises. At the same time, AI technology is also promoting the development of emerging industries, such as smart manufacturing, smart home, autonomous driving, etc., providing new growth points for economic growth [3]. However, although AI has brought great development potential, how to effectively apply it to high-quality economic development and realize its empowerment effect is still a problem worthy of in-depth discussion.

The purpose of this study is to deeply analyze the mechanism of how AI promotes high-quality economic development and explore its specific implementation path, with a view to providing useful guidance and suggestions for practice. Through this study, we can fully understand the role of AI in high-quality economic development and reveal its potential value and influence.

2. Mechanism analysis of AI promoting high-quality economic development

The promotion of AI to high-quality economic development is realized through its unique technical characteristics and wide application fields. AI has a strong penetration ability, which can penetrate into various industries and be deeply integrated with the production processes and management methods of enterprises. Through intelligent transformation, enterprises can realize production automation and refined management, thus improving production efficiency and reducing operating costs. This improvement of total factor productivity is one of the key factors to promote high-quality economic development [4-5]. The synergy of AI technology enables different industries to form closer ties and cooperation. For example, AI technology in the field of intelligent manufacturing can cooperate with technologies applied in smart logistics, intelligent services and other fields to form a complete industrial chain. This industrial linkage effect can promote the common development of related industries, and then promote the upgrading of the entire economic system.

The substitution of AI enables many tedious and repetitive tasks to be completed by machines, thus releasing a large number of labor. These laborers can turn to more innovative and valuable jobs, thus enhancing the innovation ability and competitiveness of the entire economic system. At the same time, the substitution of AI also helps to alleviate the problem of labor shortage and provide strong support for sustainable economic development [6]. AI technology itself is creative and can give birth to new industries and business models. For example, emerging industries such as smart home and autonomous driving based on AI technology are developing rapidly, injecting new vitality into economic growth. The rise of these emerging industries not only promoted the optimization and upgrading of the economic structure, but also provided new jobs and opportunities for the job market.

AI has played a positive role in promoting high-quality economic development through its permeability, synergy, substitution and creativity [7]. In order to make better use of AI technology to promote economic development, it is necessary for the government, enterprises and research institutions to work together to strengthen technology research and development, optimize policy environment, and promote industrial integration and innovative applications.

3. Research on the path of AI empowering high-quality economic development

3.1. Strengthen basic research and key technology research and development

In the path of AI empowering high-quality economic development, strengthening basic research and key technology research and development is a crucial link. By enhancing the independent innovation ability and core competitiveness of AI technology, it can inject strong impetus into the national economic development and promote the transformation and upgrading of related industries.

Strengthening basic research is the cornerstone of improving the independent innovation ability of AI technology. Basic research is the source of scientific and technological innovation. Only by deeply exploring the basic principles, algorithms and models of AI can we provide solid theoretical support for subsequent technological innovation and application development. Therefore, the government and enterprises should increase investment in AI basic research, encourage scientific research institutions and universities to carry out original research, and cultivate a group of internationally influential scientific research teams and leading talents. Research and development of key technologies is the key to improve the core competitiveness of AI [8]. In AI technology, algorithm, data and computing power are the three core elements. In view of these factors, we should focus on developing more efficient and intelligent algorithms to improve the ability of data processing and analysis; At the same time, strengthen the research and development of technologies such as cloud computing and edge computing, and provide strong computing power support for AI. In addition, we should also pay attention to the security and privacy protection of AI technology to ensure the sustainable development of technology.

On the implementation path, the following measures can be taken: First, establish a collaborative innovation mechanism for Industry-University-Research, promote in-depth cooperation among scientific research institutions, universities and enterprises, and jointly promote the research and development and application of AI technology; Second, strengthen international cooperation and exchange, introduce foreign advanced technology and management experience, and enhance the international competitiveness of China's AI technology; The third is to optimize the innovation environment and provide good policy support and innovation atmosphere for researchers and entrepreneurs. Through the implementation of the above measures, we can strengthen the basic research and key technology research and development of AI technology, and improve its independent innovation ability and core competitiveness [9]. This will provide strong technical support for high-quality economic development, promote the transformation and upgrading of related industries, and achieve sustainable economic development.

3.2. Optimize the industrial development environment

By improving the policy system, strengthening Industry-University-Research cooperation and promoting the ecological construction of industrial innovation, it can provide strong support and guarantee for the rapid development and application of AI technology. The government should formulate and improve the policy system for the development of AI industry, and clarify the direction and goal of industrial development. This includes providing tax incentives, financial support and other policy measures to reduce the cost of R&D and application of AI technology. At the same time, the government should also strengthen the supervision of AI technology to ensure its safety and controllability and prevent potential risks.

Industry-University-Research cooperation is an important way to promote AI technology innovation. The government should take the lead in building a cooperation platform in Industry-University-Research to promote close cooperation among universities, scientific research institutions and enterprises. By sharing resources and exchanging needed goods, the research and development process of AI technology can be accelerated and the efficiency and quality of technological innovation can be improved. In addition, Industry-University-Research's cooperation will help to cultivate talents with innovative spirit and practical ability, and provide talent guarantee for the sustainable development of AI industry.

Industrial innovation ecology is the key to promote the application of AI technology [10]. The government should guide and support enterprises to build an open, collaborative and innovative industrial ecology, encourage cooperation and competition among enterprises, and jointly promote

the wide application of AI technology. At the same time, the government should also increase its support for innovation and entrepreneurship, provide resources such as incubators and accelerators for start-ups, lower the threshold of entrepreneurship and improve the success rate of entrepreneurship.

Optimizing the industrial development environment is one of the key paths to promote the high-quality development of AI-enabled economy. By improving the policy system, strengthening Industry-University-Research cooperation and promoting the ecological construction of industrial innovation, it can provide strong support and guarantee for the rapid development and application of AI technology, and then promote the high-quality development of the economy.

3.3. Deepen the integration and application of AI and traditional industries

With the continuous progress of AI technology, its deep integration with traditional industries has become a new engine to promote high-quality economic development. Deepening the integrated application of AI and traditional industries, especially in intelligent manufacturing, intelligent agriculture, intelligent finance and other fields, is of great significance for improving industrial efficiency, optimizing industrial structure and promoting innovation and development (Figure 1).

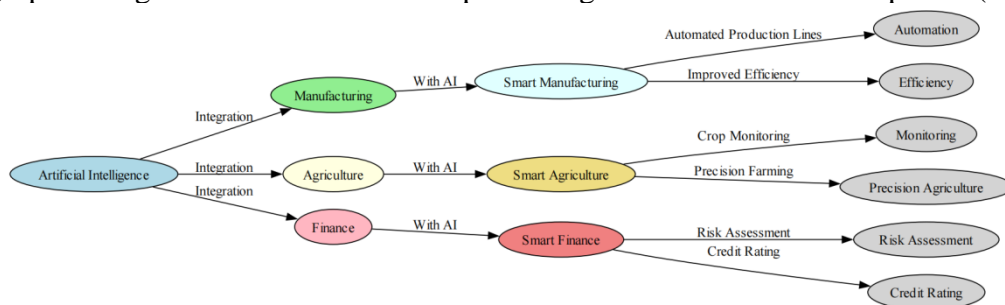


Figure 1: Integrated application of AI and traditional industries

Intelligent manufacturing is a model of deep integration of AI and manufacturing. By introducing AI technology, automation and intelligent management of production line can be realized, production efficiency can be improved and production cost can be reduced. AI technology can also be used to analyze production data in real time, optimize production process and improve product quality. In addition, AI can also help the manufacturing industry achieve personalized customization and flexible production to meet the diversified needs of the market.

In the agricultural field, AI technology also shows great application potential. Through intelligent sensors, unmanned aerial vehicles, remote sensing technology and other means, the growth of crops can be monitored in real time, providing scientific basis for agricultural production activities such as precision fertilization and irrigation. At the same time, AI technology can also be used for early warning and prevention of pests and diseases, reducing the use of pesticides and improving the quality and safety of agricultural products. In addition, AI can also help agriculture achieve intelligent management and improve agricultural production efficiency.

In the financial field, the application of AI technology is changing the operation mode of the traditional financial industry. Through AI technology, financial institutions can achieve more accurate risk assessment, credit rating and loan approval, and improve the efficiency and security of financial services. Using AI technology, an intelligent investment advisory system can also be developed to provide investors with more personalized investment advice and asset allocation schemes. In addition, AI can also help financial institutions achieve intelligent customer service and improve customer satisfaction.

Deepening the integration and application of AI and traditional industries is an important way to

promote high-quality economic development. By strengthening the application of AI technology in intelligent manufacturing, intelligent agriculture, intelligent finance and other fields, we can promote the transformation and upgrading of related industries, improve industrial efficiency and innovation ability, and inject new vitality into economic development. At the same time, the government and enterprises should strengthen cooperation, increase investment and promote the wide application and development of AI technology.

3.4. Cultivate and expand the AI industry

In order to empower high-quality economic development, we must actively cultivate and expand the AI industry, and promote the rapid development of the industry by supporting innovation and entrepreneurship, strengthening talent training and introduction, and building an internationally competitive AI industrial cluster. Innovation and entrepreneurship is the key driving force to promote the development of the AI industry. The government should increase its support for innovation and entrepreneurship in the AI field and provide preferential entrepreneurial policies, financial support and incubation services. At the same time, encourage enterprises to strengthen cooperation with scientific research institutions and universities, jointly develop new technologies and products, and promote the transformation of scientific and technological achievements. In addition, activities such as innovation and entrepreneurship competitions can be held to explore and cultivate outstanding AI entrepreneurial projects and teams.

Talent is the core element of the development of AI industry. The government and educational institutions should strengthen the training of AI professionals, improve the relevant curriculum system and improve the quality of education. At the same time, actively introduce excellent AI experts and teams at home and abroad to provide them with generous treatment and a good working environment. In addition, the skill level of existing employees can be improved by establishing AI training base and carrying out skill training. In order to enhance the international competitiveness of AI industry, the government should plan and build a number of AI industrial parks and bases to attract outstanding AI enterprises and research institutions at home and abroad to settle in. Through the industrial agglomeration effect, we will promote the close cooperation between upstream and downstream enterprises in the industrial chain and form a complete industrial chain. At the same time, strengthen exchanges and cooperation with international advanced enterprises and research institutions, introduce advanced technology and management experience, and promote the development of the industry in the direction of high-end and intelligence.

By supporting innovation and entrepreneurship, strengthening talent training and introduction, and building an internationally competitive AI industrial cluster, we can effectively cultivate and expand the AI industry. This will inject new vitality into high-quality economic development, promote the optimization and upgrading of industrial structure and enhance the overall competitiveness of the country.

4. Problems and countermeasures of high-quality development of AI-enabled economy

With the hot concept of AI, some regions and enterprises have blindly followed the trend of investment, leading to some low-quality, repetitive AI projects. These projects often lack core technology, and are simply piled up or imitated, which cannot form effective industrial competitiveness. Although AI technology has a broad application prospect in many industries, in the actual integration process, due to technical adaptability, industry differences, enterprise acceptance and other issues, the integration effect is not ideal, and the enabling role of AI technology cannot be fully exerted. The development of AI technology should drive the development of a series of potential related industries. However, due to lack of market awareness, insufficient policy support,

scattered innovation resources and other reasons, the development of these potential related industries is still in a downturn, failing to form an effective industrial chain synergy.

In view of the above problems, the government should formulate a detailed development plan for the AI industry, and define the development goals, key tasks and safeguard measures. At the same time, establish a project evaluation and supervision mechanism to avoid blind investment and redundant construction and ensure the healthy and orderly development of the AI industry. In view of the shortage of talents in the AI field, the government, universities and enterprises should work together to strengthen the training and introduction of talents. By setting up scholarships, internship training bases and school-enterprise cooperation, more AI professionals with practical experience will be trained. At the same time, increase the introduction of overseas high-level talents to provide intellectual support for the development of the AI industry. With the wide application of AI technology, the construction of relevant laws, regulations and ethical norms is particularly important. The government should speed up the formulation and improvement of relevant laws and regulations, and clarify the development, application and management norms of AI technology. At the same time, promote the establishment of AI ethics review mechanism to ensure the healthy development of AI technology and meet social ethics requirements.

By strengthening the top-level design and planning guidance, improving the talent training and introduction mechanism, and strengthening the construction of laws, regulations and ethical norms, we can effectively solve the problems faced in the process of high-quality development of AI-enabled economy, promote the sustained and healthy development of AI industry, and inject new impetus into high-quality development of economy.

5. Conclusion

As the core driving force of the new round of industrial transformation, AI is profoundly changing all walks of life through its powerful data processing ability, autonomous learning ability and decision support ability, and injecting new vitality into the high-quality economic development. Through intelligent transformation, enterprises can realize production automation and refined management, thus improving production efficiency, reducing operating costs, and further promoting the total factor productivity of the economic system. In addition, the synergy of AI technology promotes the close contact and cooperation between different industries, forms an industrial linkage effect, drives the common development of related industries, and further promotes the upgrading of the entire economic system. In order to realize the empowerment effect of AI on high-quality economic development, it is necessary to strengthen basic research and key technology research and development, and enhance the independent innovation ability and core competitiveness of AI technology. At the same time, we should deepen the integration and application of AI and traditional industries, promote the transformation and upgrading of related industries, and improve industrial efficiency and innovation ability. In addition, it is necessary to actively cultivate and expand the AI industry, and promote the rapid development of the AI industry by supporting innovation and entrepreneurship, strengthening talent training and introduction, and building an internationally competitive AI industrial cluster. Although AI has brought great potential for high-quality economic development, it still faces many challenges in practical application. Therefore, the government, enterprises, research institutions and other parties need to work together to strengthen technology research and development, optimize the policy environment, promote industrial integration and innovative applications, ensure the effective application of AI technology, and achieve its goal of empowering high-quality economic development.

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