Research on Competition and Cooperation in the Artificial Intelligence Industry between China and the United States under the New Situation

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Abstract: Against the backdrop of complex international developments and accelerated industrial innovation, the global artificial intelligence field is in a period of rapid growth, with its scale continuing to increase. This trend not only reflects the gradual embedding of AI technology into the core areas of various industries, but also promotes the rapid expansion of industrial ecosystems into a networked and interconnected state. The phenomenon of technology fission and innovation integration in cross-border cross collaboration is particularly prominent, The economic weight and influence of the AI field in the global system cannot be underestimated. Many major countries have incorporated AI into their own development strategies, especially the unique model of competition and cooperation between China and the United States, which has shown an unshakable weight and guiding ability in shaping the direction and future path selection of the global AI industry. The layered cooperation forms have further blurred the technological boundaries and provided new space for resource redistribution. This strategic game about intelligent technology is continuously expanding and infiltrating the global economic context in a multi-level manner.

Keywords: New Situation; Artificial Intelligence; Competition and Cooperation

1. Introduction

Against the backdrop of rapid evolution of information technology, artificial intelligence has become an important pivot to drive a new wave of technological change, deconstructing the economic structure and lifestyle in all aspects. Its impact and potential are difficult to estimate. In recent years, the global artificial intelligence industry chain has shown an astonishing expansion rate, indicating that new technologies are deeply coupling resources in various fields. Industrial upgrading is accelerating and evolving in this process, thereby promoting endogenous adjustments in the economic structure. Most mainstream economies define artificial intelligence as a strategic battleground, embed it into national policy planning sequences, and strive to achieve technological innovation by enhancing capital injection and policy tilt, while simultaneously expanding competitive advantages to seize opportunities for future industrial restructuring.

2. The Current Background of Global Artificial Intelligence Development

2.1 The Global AI Industry Continues to Grow in Scale

In recent years, the market size of the global artificial intelligence industry has shown a clear upward trend. According to data analysis by market research institutions, the scale of the global artificial intelligence (AI) field has shown a significant expansion trend in the past few years, with an average annual growth rate exceeding 20%, demonstrating the continuous vitality and rapid progress of this sector. With technological innovation and the continuous expansion of application scenarios, it is predicted that the growth curve will continue to rise in the coming years and maintain a strong development momentum.

2.2 Deep Integration of Technology with Various Industries

Artificial intelligence technology is embedded in the fabric of various industries and has become the core engine driving the vigorous

expansion of industries, especially in the manufacturing scene. Intelligent production is quietly unfolding, quality control systems are redefined, and supply chain links are undergoing a wave of optimization. A series of changes have brought about an overall leap in efficiency and product quality. In the financial sector, risk assessment models, intelligent investment advisory, and anti fraud solutions have shown efficient and accurate characteristics due to the support of new technologies. This transformation has brought unprecedented intelligence tension and speed to financial services, while the medical field is more like a reconstructed cognitive map, from auxiliary diagnosis to new drug research and development to full process health monitoring. Various landing attempts not only improve service efficiency and service quality, but also achieve qualitative improvement,   It also shook the traditional logic of the entire medical ecosystem, prompting the transformation to move deeper.

2.3 The AI Industry Ecosystem Continues to Expand

With the iterative advancement of artificial intelligence technology and the gradual expansion of application scenarios, its industrial ecosystem is experiencing an unprecedented wave of expansion. Upstream, it starts with breakthroughs in basic research and algorithm design, extends to the development and optimization of midstream chip architecture and software systems, and then to the diversified penetration of downstream practical scenarios and the implementation of market expansion strategies. Each link is nested and intertwined with each other to form a complex and complete chain landscape. This cross-border and cross disciplinary cooperation is not only deepening, but also accelerating the process of resource integration and collaborative upgrading invisibly, blurring the technological boundaries between different industries, and reshaping the order rules within the industrial chain.

3. Comparison between China and the United States in the Field of Artificial Intelligence Industry

3.1 In Terms of Strategic Planning

The strategic layout of the United States in the field of artificial intelligence has shown a unique leading position from the beginning. The policy framework not only appears mature but also has a closed-loop system, providing a solid institutional foundation for industry development. The research and practice of artificial intelligence technology is placed in a key position of national security and international competition, triggering a high concentration of resources from all sides. In recent years, a series of key policy measures have further increased support. In the Trump era's "AI Manhattan Project", the government clearly intends to integrate the forces of academia, industry, and policy. The goal of this cross departmental linkage design is to accelerate technological breakthroughs and practical scenarios. Each link in this chain attempts to find a common force point to break through the limitations of a single subject.

In recent years, China's strategic layout in the field of artificial intelligence has significantly accelerated, especially in the past few years when the development and application of artificial intelligence technology have been elevated to a new dimension, regarded as the core engine for promoting economic structural transformation and achieving high-quality development. The government has launched multiple strategic measures, showing a multidimensional expansion trend in investment scale and support. The "New Generation Artificial Intelligence Development Plan", as a top-level guidance document, outlines a relatively clear development trajectory, including guiding ideas for the overall direction, medium - and long-term goals, and key task layout. This series of plans injects necessary impetus into the ecological construction of the domestic artificial intelligence field and provides a basic support network, thus building an overall framework for industrial prosperity and continuously having a profound impact in practice.

3.2 In Terms of Basic Research

The United States holds an absolute advantage in the field of basic research in artificial intelligence, with numerous top global research institutions and higher education institutions gathered here. Renowned universities such as Stanford University and Massachusetts Institute of Technology have become the backbone of this field, incubating many innovative

achievements and research breakthroughs that have attracted industry attention. With their strong siphon effect on world-class AI talents, these outstanding intellectual resources have built a solid foundation for promoting the continuous advancement of the discipline, while also laying the foundation for its unshakable human capital highland in this field. This unique ecosystem further consolidates the core position of the United States in the technology landscape, demonstrating distinct technology driven paradigm characteristics.

Relatively speaking, China's basic research on AI has lagged behind, but recently it has shown a development trend and key breakthrough that cannot be underestimated. The Chinese government has paid high attention to this field, and has significantly strengthened its support for scientific research and higher education institutions. It has taken significant action in terms of capital injection and policy preference. Through a series of positive measures, China has successfully attracted many international outstanding AI experts, which has played a significant role in promoting the pace of innovation in basic theory and application research of AI. However, objectively speaking, although China has continuously achieved remarkable results in the overall process of artificial intelligence, there are still specific gaps in its basic research sector compared to the United States that need to be further filled and overcome.

4. The Overall Situation of Competition between China and the United States in the Field of Artificial Intelligence

4.1 Academic Competition
The academic competition between China and the United States in the field of artificial intelligence is becoming increasingly fierce, which outlines a key trend in the global technology layout and reflects the struggle between the two sides in the track of technological innovation, the output competition of academic achievements, and the competition for international discourse power. In recent years, China and the United States have jointly produced a large number of highly influential AI research results worldwide, pushing the boundaries of artificial intelligence theoretical framework and technological innovation forward. From the two dimensions of the quantity and quality of artificial intelligence academic papers, the United States still remains a global leader.

4.2 Technological Competition
The competition between China and the United States in the field of artificial intelligence technology is becoming increasingly fierce. The United States has demonstrated impressive strength and clear advantages in AI hardware, software, and data sectors, particularly in high-end chip and algorithm innovation, highlighting its profound technological accumulation and strong innovation potential. On the other hand, although China's AI technology research and development capabilities have steadily improved, there is still a considerable gap between its development height and the international cutting-edge level in several core areas.

4.3 Market Competition
The competition between China and the United States in the artificial intelligence market is becoming increasingly fierce. The United States holds a dominant position in the global artificial intelligence sector, and its world-class companies such as Google and Amazon are particularly eye-catching in their global market share. On the other hand, Chinese artificial intelligence companies, despite their increasing competitiveness in the global market, are still facing a series of intertwined, complex, and multi-dimensional challenges.

5. The Path and Prospects of Sino US Artificial Intelligence Cooperation

5.1 Collaboration Path
5.1.1Joint Research
China and the United States need to deepen cooperation in the field of artificial intelligence, jointly promote theoretical breakthroughs and technological innovation, and work together to stand at the forefront of global AI development. Joint research projects and various academic conference platforms have become important tools to strengthen communication and cooperation mechanisms. These measures have injected strong momentum into the progress of artificial intelligence technology and also catalyzed the incubation process of major achievements.
5.1.2Technical Exchange

China and the United States need to further deepen their technological cooperation in the field of artificial intelligence, work together to promote technological innovation and the diverse sharing and practical application of achievements, and inject vitality into the global technology ecosystem. By building bridges through technology transfer and improving exchange mechanisms through technology training, they can promote the circulation and collision of artificial intelligence related experiences within a dynamic cooperation framework. These approaches aim to accelerate the pace of technology promotion and diffusion, while avoiding the limitations of rigid linear logic on practical exploration possibilities.

5.2 Cooperation Prospects

5.2.1 Promote AI technology innovation

The cooperation between China and the United States in the field of artificial intelligence is not only a growth engine for technological innovation, but also a core driving force for the comprehensive advancement of the field. Resource sharing, advantage accumulation, and joint solutions to global challenges have become the main focus. Interactive forms such as joint research and technology exchange provide support for overcoming the bottleneck of artificial intelligence technology research and development. This cooperation blurs the boundaries of knowledge and experience flow, catalyzes technological iteration and application breakthroughs, and injects vitality into the overall upgrading of artificial intelligence.

5.2.2 Expand AI application scenarios

The joint efforts of China and the United States in the field of artificial intelligence can not only broaden the application boundaries of AI technology, but also promote its deep extension in various industries, injecting strong impetus into global AI innovation and practice. By relying on strategies such as industry cooperation and market promotion, it aims to strengthen the interaction mechanism. Such interaction not only promotes the penetration and integration of artificial intelligence technology in multidimensional scenarios, but also has a significant impact on its widespread application and deep popularization.

6. Strategic Suggestions for Promoting the Development of Artificial Intelligence

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6.1 Intensify Policy Support

To promote the prosperity of the artificial intelligence industry, relevant Chinese regulatory authorities should implement a more proactive policy system, such as outlining a forward-looking strategic blueprint, optimizing the industrial ecology, injecting fiscal subsidies supplemented by tax incentives, deepening international cooperation, and tilting resources to support grassroots scientific research and technological innovation activities. This will leverage the simultaneous progress of technological breakthroughs and application penetration in the field of artificial intelligence, while focusing on the deep exploration of basic theories and core technology chains. Through this approach, it will help refine the industrial structure and improve performance, and simultaneously focus on the cultivation of specialized talents and the deployment of global high-level practitioners' siphon strategies.

6.2 Optimize Industrial Layout and Structure

In order to promote the vigorous development of the artificial intelligence industry and unleash technological innovation vitality, relevant departments in China need to further plan countermeasures, finely adjust the industrial architecture and layout design, and thus connect the collaborative veins between different fields to maintain long-term innovation driving force. Deep collaboration between upstream and downstream of the industrial chain has become the focus, and resource integration is also an essential link. In addition, attention should be paid to the growth potential and implementation path of industrial concentration and clustering effects. The above strategies collectively point to the growth and endogenous power of the industrial system, and shape more possibilities for the future technological ecology. In this process, the coordination between policy support and market momentum is particularly crucial.

6.3 Strengthen Talent Cultivation and Introduction

In order to ensure the vitality of the artificial intelligence industry, relevant departments in China urgently need to optimize the talent

cultivation and introduction layout in this field, consolidate the intellectual resource base, and inject strong power into industry innovation and development. It is necessary to enhance the capabilities of higher education and research institutions, and at the same time, promote the deepening of education and training systems and absorption channels for enterprises. Focusing on supporting will have a more catalytic effect and attract enterprises to actively participate in the process of talent incubation and attraction.

7. Conclusion

As the two key economies in the global artificial intelligence field, the competitive situation between China and the United States profoundly affects the overall pattern of industrial development. The complex international situation brings a dual interweaving of challenges and opportunities. Both sides urgently need to deepen interaction and cooperation to promote the transformation of AI technology, thereby helping the overall prosperity and sustainable evolution of the global technology ecosystem. In parallel, the Chinese government needs to further strengthen policy guidance and support for the artificial intelligence industry, in order to achieve higher-level development coordination and technological fission. If both sides can
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continue to invest in sincere cooperation, the global artificial intelligence industry will gradually enter a more dynamic and continuously optimized new stage.

References

[1] Cheng Le, Zhao Yilin   American AI regulation and China's response under institutional competition [J/OL]. Ideological and theoretical front, 2025, (01): 93-101 [2025-03-05]

[2] Dang Lijuan, Lu Wei   New Trends in the Development of Artificial Intelligence Industries in China and the United States [J]. Macroeconomic Management, 2024, (12): 87-92

[3] Zhou Yachao, Wei Liang, Liu Xianglai Overview of Global Artificial Intelligence Industry Development [J]. Intelligent IoT Technology, 2024, 56 (06): 25-30

[4] Zhulan   Spatial polarization and international catch-up of China's AI development - based on the dual perspective of technology and industry [J]. Rural Finance Research, 2024, (03): 67-80

[5] Yang Xiyi, Jia Jia, Zhou Xiaoyu, etc Comparative analysis and enlightenment of R&D and innovation of leading AI enterprises in China and the United States [J]. Journal of the Chinese Academy of Sciences, 2024,39 (06): 1084-1096