ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue XI, November 2026

Jensen Huang, Le Huang, and the Future of Artificial Intelligence in China: Technological Competition, Semiconductor Geopolitics, and Global AI Governance

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DOI: https://doi.org/10.51583/IJLTEMAS.2026.151100060

Received: 10 November 2026; Accepted: 15 November 2026; Published: 26 November 2026

ABSTRACT

The rapid development of artificial intelligence (AI) has intensified technological competition between the United States and China, making advanced semiconductors, computing infrastructure, and international business relationships increasingly important to global economic and national security. Jensen Huang, founder and chief executive officer of NVIDIA, represents the central role of advanced semiconductor technology in the global AI revolution. Le Huang, also known as Alice Huang, has attracted international attention because of her business connections with Singapore-based cloud-computing company Megaspeed International and her reported relationship with Jensen Huang. Their respective positions illustrate how personal relationships, corporate networks, semiconductor supply chains, and geopolitical competition can intersect in the international AI industry. This paper examines the implications of these developments for China's AI ambitions, focusing on technological independence, semiconductor restrictions, international investment, and the future of global AI governance. It argues that China's AI development will depend not only on domestic innovation but also on access to advanced computing resources, international cooperation, energy infrastructure, and a sustainable technological ecosystem.

Keywords*:* Artificial Intelligence (AI); Jensen Huang; NVIDIA; Le Huang; Megaspeed; China's AI Development

1. INTRODUCTION

Artificial intelligence (AI) has become one of the most important determinants of economic competitiveness, technological development, and national security in the twenty-first century. The competition between the United States and China is particularly significant because both countries recognize AI as a strategic technology with applications in manufacturing, finance, healthcare, transportation, military systems and scientific research. Jensen Huang, the Taiwanese-born founder and chief executive officer of NVIDIA, has become one of the most influential figures in this transformation. NVIDIA's graphics processing units (GPUs) **(Figure.1)** (Durney and Fourie, 2026; Khattak and Mikaitis, 2026; Kim and Sul, 2026), accelerated computing platforms, and AI software ecosystem provide essential infrastructure for training and deploying advanced AI models. Meanwhile, Le Huang, also known as Alice Huang, has attracted attention through her business activities and reported connections with the international semiconductor supply chain. Her association with Megaspeed International has raised questions about the relationship between cloud-computing businesses, restricted semiconductor exports, and China's access to advanced AI computing resources. This paper examines these developments and considers their broader implications for China's AI future.

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2. JENSEN HUANG AND NVIDIA'S STRATEGIC INFLUENCE

2.1 The global AI semiconductor ecosystem

Jensen Huang founded NVIDIA in 1993 and transformed the company from a graphics-processing manufacturer into a leading provider of accelerated computing and AI infrastructure. Its GPU technology, CUDA programming platform, and integrated computing systems have become fundamental components of modern AI development. NVIDIA's influence extends beyond hardware production. Its software ecosystem, developer relationships, research partnerships, and data-centre technologies create significant competitive advantages. Consequently, access to NVIDIA processors has become an important strategic consideration for Chinese technology companies. Huang has repeatedly emphasized the importance of international technological competition and has recognized the capabilities of Chinese AI researchers and companies. However, US export restrictions have complicated NVIDIA's commercial relationship with China. This creates a strategic dilemma: restricting Chinese access to advanced American technology may protect US technological advantages in the short term but could accelerate China's domestic semiconductor development.

3. LE HUANG AND THE GEOPOLITICAL DIMENSIONS OF AI

Le Huang, also known as Alice Huang, is a Chinese businesswoman whose background includes financial-sector positions and business activities involving Singapore-based Megaspeed International. According to Reuters reporting published by Channel NewsAsia, she became Megaspeed's controlling shareholder in 2023. The company describes itself as an NVIDIA cloud partner. CAN. Her reported relationship with Jensen Huang has attracted international scrutiny, particularly following media allegations concerning possible Chinese intelligence connections. These allegations have not been independently established by Reuters, and China has rejected them. NVIDIA has announced an independent board investigation and stated that it has no reason to believe that national-security information or company trade secrets were compromised. It is important to distinguish documented corporate relationships from unverified intelligence allegations. Le Huang should not automatically be characterized as a technological decision-maker or representative of China's AI industry. Nevertheless, this controversy illustrates an important dimension of contemporary technological competition: AI infrastructure involves international financial transactions, cloud-computing providers, semiconductor distribution networks, and sensitive commercial relationships. The case also demonstrates why multinational technology companies require stronger corporate governance, transparent ownership structures, customer verification, and export-control compliance.

4. CHINA'S AI DEVELOPMENT AND SEMICONDUCTOR INDEPENDENCE

China has considerable potential to become a major global AI power. Its advantages include a large domestic market, extensive manufacturing capabilities, substantial engineering talent, government-supported research, and rapidly developing digital infrastructure. Companies such as Huawei, Alibaba, Baidu, and DeepSeek are contributing to China's AI ecosystem through processor development, cloud computing, large language models, and AI applications. One important development is China's effort to reduce dependence on NVIDIA processors. Huawei's Ascend accelerator family represents an important domestic alternative. DeepSeek has also explored developing its own AI inference chips, demonstrating the increasing connection between AI model development and semiconductor independence. However, semiconductor independence remains challenging. Advanced chip production requires sophisticated lithography equipment, high-bandwidth memory, advanced packaging, semiconductor materials, and highly specialized manufacturing expertise. China's domestic AI industry must therefore develop an integrated technological ecosystem rather than concentrate exclusively on processor design.

5. US-CHINA TECHNOLOGICAL COMPETITION AND EXPORT CONTROLS

The semiconductor industry has become a central instrument of US-China geopolitical competition. Since 2022, Washington has introduced restrictions on advanced semiconductor exports and manufacturing technologies to limit China's access to certain high-performance computing capabilities. These restrictions

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have created both obstacles and incentives for Chinese technological development. According to the Center for Strategic and International Studies, export controls have accelerated China's efforts to localize semiconductor production, expand domestic equipment manufacturing, and develop alternative AI processors. China has also begun considering restrictions on exporting its own advanced AI technologies. In October 2026, its Ministry of Commerce and Ministry of Science and Technology proposed revisions covering AI models, intelligent agents, computing clusters, and other strategic technologies. These developments indicate that technological competition is becoming increasingly reciprocal. Both countries are seeking to protect strategic capabilities while maintaining international commercial opportunities. Nevertheless, excessive restrictions could fragment the global AI ecosystem, increase development costs, reduce research cooperation, and create incompatible technological standards.

6. THE FUTURE OF ARTIFICIAL INTELLIGENCE IN CHINA

China's future AI development will depend on five major factors. First, semiconductor innovation, China must improve domestic GPU performance, advanced manufacturing processes, memory technologies, and semiconductor equipment. Reducing dependence on foreign suppliers will be important for long-term technological security. Second, AI research and development. Chinese universities, research institutions, and technology companies should strengthen foundational research in machine learning, robotics, multimodal AI, and autonomous systems. DeepSeek's development demonstrates the potential of Chinese innovation under technological constraints. Third, industrial applications. AI should generate measurable economic productivity through intelligent manufacturing, healthcare, financial services, logistics, agriculture, and energy management. The long-term success of AI will depend on commercial value rather than technological demonstrations alone. Fourth, international cooperation. Despite geopolitical tensions, China benefits from international academic exchanges, scientific collaboration, investment, and access to global markets. Cooperation in AI safety, technical standards, and environmental sustainability could reduce international tensions. Fifth, governance and national security. China must balance technological innovation with data protection, cybersecurity, intellectual property rights, algorithmic accountability, and responsible AI development. These five factors will determine whether China becomes merely a major AI application market or develops a globally competitive and relatively independent AI ecosystem.

7. DISCUSSION

The relationship between Jensen Huang, Le Huang, and the international semiconductor industry provides an opportunity to examine the broader relationship between technological leadership and geopolitical competition. Jensen Huang represents the strategic importance of semiconductor innovation and global computing infrastructure. Le Huang's reported business connections illustrate how international corporate networks can become relevant to semiconductor supply-chain security and regulatory oversight. However, neither individual should be treated as representing the entirety of China's AI strategy. China's technological future will primarily be determined by institutional capacity, industrial investment, research achievements, semiconductor manufacturing, and government policy. An important possibility is that restrictions on advanced semiconductor exports could accelerate China's development of alternative technologies. Although domestic processors may initially face performance disadvantages, sustained investment and market adoption could gradually strengthen their competitiveness. Conversely, maintaining access to international markets and research networks would allow China to benefit from global innovation rather than relying exclusively on domestic technological resources. The most sustainable approach would involve competition accompanied by clearly defined international rules, transparent commercial practices, and cooperation in areas of shared interest.

8. CONCLUSION

The future of artificial intelligence in China will be shaped by the interaction between semiconductor technology, economic development, international business relationships, and geopolitical competition. Jensen Huang's leadership at NVIDIA demonstrates how semiconductor innovation can influence the direction of the global AI revolution. Le Huang's business connections and the controversy surrounding reported relationships

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with Huang highlight the growing importance of corporate transparency, supply-chain accountability, and national-security considerations. China possesses substantial opportunities to become a leading AI power through domestic semiconductor innovation, advanced research, industrial applications, and international cooperation. Nevertheless, achieving technological independence requires overcoming significant challenges in advanced chip manufacturing, computing infrastructure, and foundational research. Ultimately, the future of AI should not be determined exclusively by competition between Washington and Beijing. A more productive global environment would encourage innovation, responsible technological development, economic cooperation, and international security. China's ability to combine domestic technological independence with constructive international engagement will be a decisive factor in its position within the global AI economy.

Acknowledgments

The author is grateful to Southern Taiwan University of Science and Technology.

Data availability statement: Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

Conflicts of interest: The author declares that there are no conflicts of interest.

Author Contributions: The author contributed to the conceptualization, writing, review and editing of this manuscript.

Funding statement: There is no funding "Not Applicable”

Compliance with ethical statements consisting of conflicts of interest statements and informed consent

(1) All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

(2) The author declares that there are no conflicts of interest.

(3) Informed consent was obtained from all individual participants involved in the study.

(4) This work does not include animals as subjects.

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ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue XI, November 2026



Figure.1 A type of NVIDIA's graphics processing units (GPUs)