

The US-China Competition over Artificial Intelligence Technology

التنافس الأمريكي الصيني على تكنولوجيا الذكاء الاصطناعي



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Abstract:

The growing rise of artificial intelligence (AI) technology and the resulting global geopolitical challenges have prompted major powers to seek to maximize their gains from this technology, on the one hand, and to suppress and deprive rival powers of superiority and dominance, on the other. This is due to the strategic advantages this technology possesses, enabling those who control and dominate it to enhance their influence and dominance on the international stage. Accordingly, AI technology has become a new driver of international competition, prompting the United States and China to formulate national strategies with international dimensions aimed at achieving superiority and dominance over this emerging technology.

key words: Artificial intelligence technology, international competition, international relations, US AI strategy, China's AI strategy

المخلص

شكل الصعود المتزايد لتكنولوجيا الذكاء الاصطناعي، وما أفرزه من تحديات جيوسياسية عالمية، دافعا للقوى العظمى إلى السعي لتعظيم مكاسبها من هذه التكنولوجيا من جهة، والعمل على قمع وحرمان القوى المنافسة من التفوق فيها والهيمنة عليها من جهة أخرى. ويعود ذلك إلى ما تمتلكه هذه التكنولوجيا من مزايا إستراتيجية تمكن المتحكم فيها والمهيمن عليها من تعزيز نفوذه وهيمنته على الساحة الدولية. وبناء على ذلك أضحت تكنولوجيا الذكاء الاصطناعي محركا جديدا للتنافس الدولي، وهو ما دفع الولايات المتحدة الأمريكية والصين إلى صياغة استراتيجيات وطنية ذات أبعاد دولية تهدف لتحقيق التفوق والهيمنة على هذه التكنولوجيا الناشئة.

الكلمات المفتاحية: تكنولوجيا الذكاء الاصطناعي. التنافس الدولي، العلاقات الدولية، إستراتيجية الولايات المتحدة الأمريكية للذكاء الاصطناعي، إستراتيجية الصين للذكاء الاصطناعي

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Introduction:

Technology is emerging across various disciplines as a source of social, economic, and political development and change. It is essential to economic development and military power, as essential components of national power. Some have even argued that the fate of nations and civilizations is often determined by technological differences. As was previously the case in the fields of electricity and nuclear weapons, artificial intelligence (AI) technology—the most important emerging technology with its challenging potential—has emerged as a transformative force in various fields, including international relations. It has the potential to alter the capabilities and behavior of states, destabilize international peace and security, and reshape the international balance of power.

AI technology, along with the accompanying global geopolitical challenges, has forced major powers, particularly the United States and China, to redefine their strategic calculations. Each has adopted different strategies for global leadership and dominance of this emerging technology as a means of securing decisive strategic advantages in the areas of hard and soft power and enhancing their sphere of influence and global hegemony. This has led to intensified competition between them over this technology, which has become a driver of geostrategic competition among global powers.

On this basis, the following question can be posed: What is the strategy of the United States and China to achieve superiority and dominance in the field of artificial intelligence technology? To answer this question, we followed the following plan:

Introduction

Chapter One: Artificial Intelligence Technology as a New Dimension in International Relations

First: The Nature of Artificial Intelligence Technology

Second: Artificial Intelligence Technology and International Relations

Chapter Two: The United States' AI Strategy: Striving to Prevent Global Decline

First: Domestically

Second: Externally

Chapter Three: China's AI Strategy: Striving for Global Leadership

First: Domestically

Second: Externally

Summary and Conclusions

Chapter One: Artificial Intelligence Technology as a New Dimension in International Relations

1\ What is Artificial Intelligence Technology?

The roots of artificial intelligence date back to 1942, when American science fiction writer Isaac Asimov published his short story "Runaround,"* which inspired generations of scientists in the fields of robotics, artificial intelligence, and computer science, including American cognitive scientist Marvin Minsky. Around the same time, English mathematician Alan Turing was working on more prosaic issues. He developed a code-breaking machine for the British government, called The Bombe, to crack the Enigma code used by the German army in World War II. The computer's ability to crack the code (an impossible task for even the best mathematicians at the time) prompted Turing to question the intelligence of these machines. This led him to publish his essay "Computing Machinery and Intelligence" in 1950, explaining how to create intelligent machines and how to test their intelligence. The Turing test later became the standard for determining the intelligence of an artificial system.

On another level, the formal and scientific origin of the term "artificial intelligence" goes back to the Workshop for Research in Artificial Intelligence (DSRPAI), organized by John McCarthy and Marvin Minsky at Dartmouth College in 1956, with funding from the Rockefeller Foundation. Participants included computer scientist Nathaniel Rochester and mathematician Claude Shannon, the author of the information theory. This project is considered the founding building block of artificial intelligence as a field, as it proposed bringing together researchers from various fields to develop a new research area aimed at advancing cognitive science and building machines capable of simulating human intelligence and studying it accurately.¹

John McCarthy defined artificial intelligence as: "The science and engineering of making intelligent machines, especially intelligent computer programs, and is related to the similar task of using computers to understand human intelligence." However, artificial intelligence is not limited to methods that can be observed biologically. In defining the concept of intelligence,

* The story revolves around a robot developed by engineers Gregory Powell and Mike Donovan, based on the Three Laws of Robotics: - It shall not harm humans and shall not be harmed by inaction. - It shall obey human orders unless they conflict with the First Law. - It shall protect its existence unless they conflict with the previous two

¹ Michael Haenlein, Andreas Kaplan, «A Brief History of Artificial Intelligence: On the Past, Present, and Future of Artificial Intelligence,» **California Management Review**, V.61, N.4, 2019, PP.2, 3.

McCarty sees it as the computational aspect of the ability to achieve goals in the world.¹

Klaus Schwab defines it as: “A transformative tool of the Fourth Industrial Revolution, meaning that the latter depends largely on the convergence of digital, biological, and physical innovations.” This means that artificial intelligence is the ability to combine digital, biological, and physical innovations.²

The World Health Organization defined it as: “The ability of algorithms embedded in technology to learn from data, enabling them to perform automated tasks without the need for explicit human programming for each behavior and step of the process.”³

The Organization for Economic Co-operation and Development (OECD) defines AI as: “An automated system capable, for explicit or implicit purposes, of inferring how to generate outputs such as predictions, content, or recommendations, or making decisions that affect real or virtual environments.” AI systems vary in their levels of autonomy and adaptability after deployment. This means that an AI system is machine-based and infers, for both explicit and implicit purposes, from the inputs it receives, how to generate outputs that can affect physical or virtual environments.⁴

The United Nations defined it as including a wide range of technologies that can be defined as “self-learning and adaptive systems.”⁵

US documents define it as: "An automated system capable, within a specific set of human-defined objectives, of making predictions, recommendations, or decisions that affect real or virtual environments." AI systems use both machine and human inputs to perceive real and virtual environments, summarize these perceptions into models through automated analysis, and use model reasoning to formulate information or action options.⁶

¹ John McCarthy, «What is Artificial Intelligence?», Stanford University, 2007 Nov 12, P.2. <chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www-formal.stanford.edu/jmc/whatisai.pdf>

² Klaus Schwab, **The Fourth Industrial Revolution**, (World Economic Forum, Geneva, 2016), PP.7,27

³ World Health Organization, **Ethics and governance of artificial intelligence for health Guidance on large multi-modal models**, (Switzerland, World Health Organization, 2024), P. 8.

⁴ OECD, «Explanatory Memorandum on the Updated OECD Definition of An AI System», **OECD Artificial Intelligence Papers**, March 2024, No. 8, P. 4.

⁵ United Nation, Artificial Intelligence (AI), <https://shorturl.at/mTSBf> (19.08.2025)

⁶ 15 U.S. Code § 9401 – Definitions, <https://www.law.cornell.edu/uscode/text/15/9401>

While the European Union, in Article 3 of its Regulation on Artificial Intelligence, has defined it as follows: “An AI system means a machine-based system, designed to operate with varying levels of autonomy, which may exhibit adaptive capacity after deployment, and which, for explicit or implicit purposes, infers from the inputs it receives how to generate outputs, such as predictions, content, recommendations, or decisions, that can affect physical or virtual environments.”¹ This means that it is a system that can, with a certain level of autonomy and independence, process inputs to infer how to generate outputs (such as predictions, recommendations, decisions, and content) that can affect physical or virtual environments.

Operational Concept: Artificial intelligence is the use of science and engineering to create systems that mimic human intelligence. This means these systems are able to correctly interpret external data, learn from it, and use these lessons to achieve specific goals and tasks through autonomy and flexible adaptation.

From these concepts, three fundamental pillars of artificial intelligence can be deduced: autonomy, automation, and the ability to learn.

2/ Artificial intelligence technology and international relations

The spread of artificial intelligence in international relations has emerged as a fundamental variable in many aspects, particularly with regard to international security and economics. This transformation contributes to the construction of new global dynamics, in which technological power is the primary determinant of geopolitical position, including alliances, power structures, and international systems.²

Artificial intelligence (AI) technology has become increasingly influential in the field of international relations, both directly—such as through its explicit use in military, commercial, and industrial fields with cross-border impact—and indirectly through its integration into risk analysis systems, which impacts foreign investment, international communications, soft power strategies, and even the activities of non-governmental groups. This increasing use of AI technology in international relations has resulted in numerous geopolitical implications, including a shift in the international balance of power, the

¹ Regulation (EU) 2024/1689 of The European Parliament and of The Council of 13 June 2024 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32024R1689>

² Nguyen Minh Trang, Khuong Phuong Thao, «AI and the Transformation of Global Politics,» *International Journal of Scientific Research and Management*, V. 13, N. 2, 2025, PP. 2130, 2131.

emergence of new threats to international peace and security, and a shift in the concept of war. AI technology has also become the foremost and most important topic on the international political agenda, with various international relations actors attempting to propose utilitarian approaches to this emerging technology, given its power-multiplying effects and strategic advantages. It has come to be viewed by major powers as a strategic asset. This has prompted major powers to proactively develop national AI strategies in an attempt to dominate this technology.

Four international characteristics of artificial intelligence can be identified that make it impact international relations:

First, its ability to multiply force: This technology contributes to the rapid growth of the capabilities of the entity that effectively implements it. From a security perspective, artificial intelligence technology will enhance and improve military operations at the strategic and tactical levels.

Secondly, the force-multiplying advantage of this technology is linked to its second aspect: when countries deal with it as a strategic competition driven by the belief that whoever applies it first in their economy or armed forces will achieve a strategic advantage over other actors (first-mover advantage), which prompts some countries to take preventive measures to limit the pace of development of other actors. Here, another problem arises related to the difficulty of estimating and measuring the capabilities of the state that applies this technology quantitatively, unlike classical physical weapons, where it was sufficient to count a certain number of weapons it possesses to estimate the strength of a certain army. However, in the case of artificial intelligence, the process is difficult and complex, which greatly complicates attempts to limit the arms race and makes this technology a source of destabilization of the international system.

Third: The dual use of AI technology and its development by public and private actors in the economic and military spheres of the state blurs the lines between civilian and military applications. Therefore, the fundamental dilemma becomes the possibility of using AI for purposes other than its original purpose, such as harming someone, or using it militarily to achieve a multiplier effect, which means the malicious use of AI.

Fourth: The Revolutionary Nature of Artificial Intelligence: Historical experience has shown that technological innovations (such as firearms) give a temporary advantage to a few countries before being quickly imitated by others. However, according to Andrew Krepinevich, this advantage has not lasted long;

since the Napoleonic era, this period has been shrinking. He argues that: "If military forces want to benefit from the advantages of access to new technology, they must exploit it quickly before it is imitated and replaced by major competitors." Using Drezner's classification, which consists of two variables: the fixed costs required to develop any technology and the actors developing that technology (public or private), it can be argued that, unlike secret and expensive physical technologies such as radar detection and stealth, AI technology is low-cost and fixed, and its development is driven by private, self-interested companies, making its diffusion much faster and accelerating the narrowing of the technological gap between countries.¹

Given these international characteristics of artificial intelligence, the potential areas of this technology's impact on international relations can be identified through the model of Charles Weiss, one of the few theorists who have attempted to systematize the impact of emerging technologies on international relations, as follows:

- The ability of AI technology to innovate in global politics directly impacts international relations. The invention of nuclear weapons has led to shifts in the international balance of power.
- The spread of emerging technologies among other actors impacts the distribution of power in the international system.
- AI technology has become a fundamental variable in international competition, as major powers always prefer to be the first to develop new technologies.
- Its impact is evident through its enhancement of countries' technological capabilities, which is reflected in the country's economic position.
- AI technology has a direct impact on international relations through public opinion toward various technologies, which may influence the level of funding these technologies receive.
- Foreign policy objectives are directly reflected in funded research programs.
- International relations are affected by the level and intensity of migration of scientists between countries, and the level of freedom to conduct research.
- The impact of AI technology is evident in intellectual property protection agreements and indirectly through the rules of international law.

¹ Błażej Sajduk, «Theoretical Premises of The Impact of Artificial Intelligence on International Relations and Security,» **The Copernicus Journal of Political Studies**, (No.2, 2019), PP. 166- 171

In general, what increases the impact of artificial intelligence technology on international relations is the multiplier effects of this technology, which affect the diversification of states' capabilities, their economic standing, their military power, and their dominance over the international system, leading to a reshaping of the international system and affecting international peace and security.¹

Many international relations theories have attempted to explain how artificial intelligence technology will impact international relations, as follows:

- **Realism:** It views artificial intelligence as a crucial element of technological superiority and a multiplier of economic and military power, intensifying competition among great powers for influence and hegemony, which intensifies the chaotic nature of the international system. Consequently, states use artificial intelligence to increase and maximize their relative power at the expense of international stability.
- **Liberalism:** It believes that AI technology can enhance international cooperation through global governance mechanisms and multilateral frameworks, improving transparency and reducing uncertainty. It is a technology that all countries need for equitable progress. Liberalism therefore proposes adopting policies that share the benefits of AI more equitably, so that it does not remain the monopoly of a few countries, avoiding chaos and international competition.
- **Constructivism:** This view holds that the impact of AI technology on international relations stems not from its technical nature itself, but rather from the identities, discourses, and normative practices shaped by state interactions and the institutional structures built around it. According to Wendt, constructivism holds that "chaos is what states make it," and that material capabilities only gain significance through shared meanings. Accordingly, the impact of AI is determined by how it is framed within the international community. In Washington's view, the impact of this technology differs between its possession by Beijing and Iran.
- **Critical theories:** They seek to uncover hidden power structures, highlight inequalities, and power imbalances with the aim of building a more just and equitable global system. They therefore offer a different approach to AI, focusing on power dynamics, ethical considerations, and social justice, highlighting how AI perpetuates structural inequalities and exacerbates global power imbalances.

¹ Błażej Sajduk, *op. cit.*, PP. 171-174.

- **The Marxist approach:** acknowledges that artificial intelligence technology could exacerbate existing economic inequalities and class conflicts if exploited by capitalist interests. This necessitates regulating it and distributing its benefits fairly, while taking into account the ethics of artificial intelligence by adopting a socio-technical approach and seriously addressing the power imbalance affecting its development.¹

Chapter two: The United States' AI Strategy: Striving to Prevent Global Decline

First: On the Domestic Level

1- Establishing specialized agencies for artificial intelligence technology: Washington launched two important agencies:

- The Defense Advanced Research Projects Agency (DARPA): It was tasked with developing military technologies (self-guided missiles, stealth, and drones). Artificial intelligence and autonomous systems were considered new technologies relevant to this agency's programs, in order to avoid strategic technological surprises, maintain its military superiority, and protect its national security. This prompted the US Department of Defense in 2018 to issue the first strategic plan for artificial intelligence, after it felt this technology threatened its prosperity and security, and feared the destabilization of the international order due to the militarization of artificial intelligence by Russia and China.² Washington's 2018 defense strategy pointed to the role of artificial intelligence, big data, and autonomy as technologies that guarantee America's ability to fight and win future wars. It stated that competitors' mastery of this technology threatens to weaken the traditional superiority to which Washington is accustomed, which requires changes in industrial culture and investment sources, and protection through the National Security Innovation Base. In November 2019, US Secretary of Defense Mark Esper acknowledged that

¹ Vicente Garrido Rebolledo, «Impact of The Artificial Intelligence on International Relations: Towards A Global Algorithms Governance,» **UNISCI Journal**, N° 67, January 2025, PP. 12- 16.

² Carlos Miguel Branco Sandels, **The beginning of Artificial Intelligence arms race: A China-U.S security dilemma case study**, Mestrado em Relacoes Internacionais e Estudos Europeus Dissertacao, (Escola de Ciencias Sociais, Universidade de Évora, Portugal, 2019), PP. 60, 61.

"Whichever country gets access to AI first will have a decisive advantage on the battlefield for years to come. We have to get there first."¹

▪ The National Security Commission on Artificial Intelligence (NSCAI)*: The US leadership recommended that the AI revolution must be linked to the return of great power competition, which threatens the United States' role as a global driver of innovation and military superiority. This commission has become suspicious of China's technological ambitions, especially after Chinese President Xi Jinping's call in October 2018 for accelerating the development of AI to ensure superiority in global science and technology competition, and as part of the future shift toward smart warfare. The National Defense University also acknowledged that military AI represents an irreplaceable opportunity for emerging militaries to develop rapid and distinctive leaps in their capabilities. According to Burke, the People's Liberation Army (PLA) is using big data and deep learning tools to enhance its precision strike capabilities to destroy systems. This gives China the advantage of quickly weakening an opponent's force by paralyzing complex, interconnected combat systems, such as those in the United States. This poses a direct challenge to Washington in the military balance of power. This prompted FBI Director Christopher Wray in 2020 to accuse the Chinese government of "fighting a generational battle." To outperform Washington in economic and technological leadership, through a comprehensive approach that integrates corporate acquisitions, scientific cooperation, cyber intrusions, and espionage, which requires Washington to respond comprehensively to all of society.²

2- Promoting innovation and domestic production: Washington has promoted innovation and domestic production with the aim of reducing the import of foreign-manufactured semiconductors, given the potential threat of a conflict with China over the island of Taiwan. This prompted Washington to enact the Chips and Science Act of 2022, which allocated \$52.7 billion for domestic semiconductor research, development, production, and training. According to the White House, this law will strengthen a sustainable industrial base, reduce foreign dependence on critical technologies and vulnerable supply

¹ Edward Hunter Christie, Caroline Buts, Cind Du Bois, «America, China, and the Struggle for AI Supremacy,» **Conference Paper**, 24th Annual International Conference on Economics and Security, Volos, Greece, 8,9 July 2021, PP. 8,9

* An expert panel established by the U.S. Congress to consider the methods and means necessary to advance the development of artificial intelligence, machine learning, and related technologies to comprehensively address the national security and defense needs of the United States.

² Edward Hunter Christie, Caroline Buts, Cind Du Bois, **op. cit**, PP. 8,9

chains, support American technological superiority, confront the Chinese challenge, and meet national security needs. This means that the CHIPS Act is considered a strategic American mechanism for addressing a range of challenges with economic, security, and geopolitical implications, as follows:

- The geopolitical dimension: The rise of China and the shift in the international balance of power toward multipolarity, threatening Washington's post-war status as the sole dominant superpower. This is therefore part of a strategic competition with China to contain it and maintain its position as a technological superpower, ensuring the continuation of American global influence.
- National security dimension: Protecting national security, including cybersecurity, technological infrastructure that includes an unsecured and easily hacked international supply chain, and adapting to future wars (autonomous weapons systems and data control).
- The economic dimension: Achieving future economic resilience in the face of global crises and trade wars by reducing reliance on an uncertain and vulnerable international supply chain, while stimulating and enhancing local innovation and production with significant government support.¹

Second: At the external level

1- Imposing tariffs: Washington has imposed strict tariffs and export controls on the export of chips, production equipment, and design technology to China, barring Americans wishing to work in the Chinese technology sector, and restricting US investment in China to limit Chinese companies' access to critical technologies.² This is what President Trump did when, under Order No.13959 of 2020, he banned US investment in Chinese companies linked to the Chinese military-industrial complex. This ban was continued by the Biden administration under Order No. 14032 of 2021 with some technical modifications.³

Washington has strengthened this policy, tightening oversight, closing loopholes in the previous set of export restrictions, expanding licensing requirements, and subjecting more Chinese companies to trade restrictions. This has led to an expansion of the scope of the technology blockade policy, as the primary goal of

¹ Michael A. Peters, «Semiconductors, geopolitics and technological rivalry: The US CHIPS and Science Act 2022,» *Educational Philosophy and Theory*, Vol. 55, No. 14, 2023, PP. 1644, 1645.

² Francisco Márquez de la Rubia, «The battle for technological supremacy: The US vs. China,» *Analysis Document*, 23/2025, instituto-español-de-estudios-estratégicos, 26/03/2025, P.5

³ Edward Hunter Christie, Caroline Buts, Cind Du Bois, *op. cit*, PP. 10-12

this policy is not only to protect US industry or prevent the leakage of intellectual property to China, but also to disrupt China's semiconductor industry by slowing or suppressing China's path toward technological self-sufficiency.

In 2023, Washington also imposed restrictions complementing the Chips and Science Act, including a ban on US companies manufacturing chips smaller than 28 nanometers in both China and Russia for the next ten years. This is critical given that the most advanced chips are 5 and 3 nanometers. It also prohibited countries with advanced chip production machinery from exporting them to China.

2- Building alliances to restrict Chinese technological growth: Washington has formed a broad network of alliances with leading Western countries to counter China's attempts to bridge the technological gap in advanced technologies, considering these international alliances crucial to the balance of power between countries.¹ In this regard, Washington is leading a group of allies to prevent the transfer of artificial intelligence technology to China. At the forefront of these allies are Japan and the Netherlands, which host key technology companies in the chip industry. The Netherlands is home to ASML, the only company in the world capable of manufacturing the equipment necessary to make advanced chips below 10 nanometers, which are crucial for excellence in artificial intelligence technology. The same applies to Japan, a major player in the production of this equipment, as it hosts companies that are the world's sole suppliers of one of the inputs for chip production, such as the Ajinomoto Group. These two countries are expected to tighten their controls on their technology exports to China, in response to pressure from Washington.

On the other hand, Washington has made significant diplomatic efforts to persuade other countries not to use Chinese company Huawei's equipment to build 5G networks. Secretary of State Pompeo emphasized this in January 2020, saying, "We warn our allies and partners of the significant security and privacy risks associated with allowing Huawei to build 5G networks in their countries."²

Chapter 3: China's AI Strategy: Striving for Global Leadership

First: On the Domestic Level

1- Massive Investment and Strong Government Support Programs: China has one of the most sophisticated and ambitious government support programs.

¹ Marina Yue Zhang, «Cold War 2.0: Artificial Intelligence in the New War between China, Russia, and America,» *Australian Journal of International Affairs*, Vol.78, No.4, 2024, PP. 521, 522.

² Francisco Márquez de la Rubia, *op. cit*, PP. 9- 11.

Since 2016, Beijing has intensified its efforts to promote technological self-sufficiency to reduce its dependence on Western technology. Beijing has adapted these programs to empower its small and medium-sized enterprises (SMEs) to emerge as global leaders in specialized technology fields. Two key programs stand out: "Small Giants" and "Individual Champions." These programs aim to identify and support companies that already hold dominant positions in key technologies or are on the path to achieving them, focusing on sectors where they have significant capabilities and can rapidly gain competitive advantages. This strategy has yielded strong results, with Chinese companies emerging as global leaders in key areas of AI development.¹

To transform into the world's largest center and leader in AI innovation, China has invested massively, aiming to build a 150 billion \$ industry by 2030. This industry is based on a combination of strong government support and private technology innovations, and is promoting dual-use (military/ civilian) capabilities to accelerate AI development. This reflects the rise of AI as a strategy among Chinese leaders, which has raised concerns within the military establishment about the potential implications of AI for command and decision-making processes, especially with US advances in this field. This has created a security technology gap for China that must be bridged. According to General Liu Guoqi, Director of the Science and Technology Commission of the Central Military Commission, AI "will accelerate military transformation, bringing about fundamental changes in military unit programming, operational methods, equipment systems, and combat power generation models, ultimately leading to a profound military revolution." He warns, "In the face of destabilizing technology, we must... seize the opportunity to take a sharp turn for superiority. If it doesn't disrupt, it will disrupt!"²

2- Confronting US restrictions: China has managed to circumvent US technological repression by relying on open source for its technology industry. Even if Washington decides to slow the progress of open-source projects, this will give China a significant strategic advantage, as American developers will be forced to build their systems on Chinese technology, given that the most advanced open-source technologies will come from China. Beijing has also launched an aggressive campaign to attract global researchers and scientists, as well as to return Chinese scientists and researchers trained abroad to their

¹ *Ibid*, PP. 21- 23.

² Michael C. Horowitz, Gregory C. Allen, Elsa B. Kania, Paul Scharre, «Strategic Competition in an Era of Artificial Intelligence,» **Report**, (Washington DC, Centre for a New American Security, July 2018), PP. 12, 14.

country. More than 1,400 scientists left their positions in the United States to return to China in 2021 alone.

3. State-controlled innovation: China's rapid progress has been based on massive investment in scientific and technological research. Since 2011, China surpassed the United States in the number of patents, and ten years later, it has already doubled. This development reflects a paradigm shift that challenges Western assumptions about innovation and progress. China's ability to combine state power with market-driven innovation has reshaped the global technological landscape. Here, we find that the process of public-private sector cooperation in China is less complex than in many Western countries, where Chinese state capitalism has proven more innovative than market capitalism at times. On the other hand, despite the success of private technology companies like Alibaba, the Chinese government has tightened its control over the country's technological direction, prioritizing industrial security and global influence over economic efficiency. This shift reflects a growing distrust of globalization in the biotechnology sector.¹

4. Expanding the technological base and achieving self-sufficiency: China has adopted a comprehensive strategy that encourages the growth of thousands of "small giants," specialized companies with the potential to master critical technologies. The goal of this approach is to resolve the technological bottlenecks facing Chinese technology and ensure leadership in key sectors. Here, the "Made in China 2025"* plan and the "Digital Silk Road" initiative stand out as ambitious plans to establish China as a technological superpower while maintaining domestic leadership. Therefore, China's pursuit of self-sufficiency in the technology sector is a deliberate strategy to reduce its dependence on imports in critical technologies, place it at the forefront of global innovation, consolidate its position as a leader in the future global economy, protect it from geopolitical tensions, and redefine the balance of power in the 21st century.²

Overall, as is clear, China's strategy goes beyond mere competition. Rather, it aims to create a self-sufficient, state-controlled technological ecosystem capable of challenging Western dominance in vital sectors.

¹ Francisco Márquez de la Rubia, *op.cit*, PP. 19-22.

* A Chinese plan to transform the country into a leading technological power that surpasses its competitors and reduces its dependence on Western technology by achieving self-sufficiency, encouraging innovation and the development of high-quality products domestically, and increasing local content in key components to 70% by 2025.

² Francisco Márquez de la Rubia, *op.cit*, PP. 21- 23.

Second: At the external level

1- The Digital Silk Road Initiative: Achieving technological dominance (both in terms of technical standards and online platforms) is crucial to achieving economic, political, and cultural supremacy in a world experiencing increasing technological fragmentation. Therefore, Beijing launched the Digital Silk Road Initiative to integrate countries into China's digital system by providing digital resources to participating countries and developing existing digital infrastructure.* Regardless of its stated objectives, this digital road, built and led by China, seeks to connect Europe, Asia, and Africa to China's digital infrastructure and enhance cooperation in the areas of e-commerce and cyber security.

Overall, China designed this digital initiative to enhance its technological and strategic influence in the face of American restrictions seeking to suppress its technological development. This approach has raised geopolitical concerns for the United States and its Western allies, who have long dominated technology, as it represents a direct challenge to them.¹

The digital road thus confirmed China's ability to reach advanced technological horizons in digital industries and services and to assume a new position in international trade, abandoning its previous image as the "world's factory" of foreign-designed products and cheap labor, and increasingly asserting a new geopolitical position for its technology companies that challenge Western companies. Telecom companies such as Huawei have marketed their products and standards by establishing basic digital infrastructure and 5G networks in the countries of the Digital Silk Road.²

2- The Governance of Artificial Intelligence (GAIGI): An initiative announced by Chinese President Xi Jinping in October 2023 to establish global rules for AI governance and support international cooperation in science and technology. This initiative is in light of the security risks posed by AI, such as attempts to monopolize its innovations and malicious uses. China seeks to establish global standards for the safe and ethical use of AI to serve its global ambitions. In this regard, China calls for the promotion of AI to benefit all of humanity and for the

* Laying fiber optic cable networks, establishing data storage and cloud computing centers, and launching interconnected satellite systems as part of the digital fabric.

¹ Andrew Mazen Dahdal, Adel Abdel Ghafar, «The Digital Silk Road: "Tech-Diplomacy" as a Paradigm for Understanding Technological Adoption and Emerging Digital Regulations in MENA,» **Asian Journal of Law and Society**, January 2025, PP. 9, 10.

² Erik BAARK, «China's Digital Silk Road: Innovation in a New Geopolitical Environment,» **East Asian Policy**, Vol.16, n. 01, PP. 27, 28.

participation of countries in the Global South in governance efforts. This aligns with China's stated vision for reforming the international order, the rules of which were unilaterally shaped by Washington to serve its interests. This initiative also reflects China's approach to peaceful development as a fundamental approach to reassuring the world of its rise and recognizing its global leadership. This initiative also provides China with the opportunity to formulate AI standards that reflect its values that are different from Western values and standards, and serve its interests and ambitions to lead this field globally and establish itself as a global power. It also demonstrates its ability to offer an alternative to Western models and hegemony in setting standards, and to build institutional practices based on principles rather than rules in the international system, and to fill the growing international absence of America, which has constituted a geopolitical challenge to Washington and its global influence since 1945.¹

3- Trade and Economic Restrictions: Despite US restrictions, China has been able to develop chip production. The Chinese company SMIC has been able to produce 7-nanometer chips, enabling it to achieve self-sufficiency in critical technologies, avoid Western restrictions, and maintain its competitiveness in the artificial intelligence race at a low cost. Based on this, Beijing has turned Western sanctions into its own weapon, denying American companies specializing in this field access to the large Chinese market. This has led to a decline in the value of the American companies involved, resulting in a \$240 billion decline in their capital, which has directly and negatively impacted these American companies' ability to innovate.²

4- Ban on exporting minerals: China has banned the export of rare earth minerals to Washington, in direct response to the US ban on chip exports to China. These minerals are rare and vital for national defense and military applications, as well as for the manufacture of electronic chips and other high-tech products. Given China's large reserves of 44 million tons, its control over 63% of global mineral mining and 90% of global processing activities, this ban will have significant repercussions for US national security and economic interests. Washington faces challenges in the security and sustainability of the global supply chain for these rare earth minerals, which are vital to maintaining superiority in artificial intelligence technology. As Bilsborough noted, "Given

¹ Raphael Racicot, Kurtis H. Simpson, «China's AI Governance Initiative and Its Geopolitical Ambitions,» July 22, 2025, <https://shorturl.at/Cry7P> (2025, 08, 20)

² Francisco Márquez de la Rubia, *op. cit.*, PP. 18, 19.

the scarcity of rare earth production outside China, Washington will have little opportunity in the event of a supply disruption."¹

5. Global Marketing of Chinese Technology: China has succeeded in promoting the global adoption of its technology through a strategy of direct commercial engagement, particularly with countries in the Global South. Beijing has leveraged financial and technical assistance to encourage the purchase of Chinese hardware and software, achieving remarkable success in Africa, Latin America, Southeast Asia, and the Middle East. This progress has not only been commercial, but has also had profound political implications. In many of these regions, Chinese technology has played a pivotal role in enabling their people to access information and develop their countries, given the competitiveness of Chinese companies. This has made it difficult for the largest American technology companies to compete with their Chinese counterparts in these markets, and even in Western markets. From another perspective, the qualitative rise in Chinese technological capabilities has led to Chinese companies capturing increasing shares of artificial intelligence technology. This indicates that these moves represent a shift in the geopolitical landscape, as emerging powers reject the notion that building strong relations with the West conflicts with building strong relations with China as well.²

Summary and conclusions

Artificial intelligence is the use of science and engineering to create systems that mimic human intelligence. This means these systems can correctly interpret external data, learn from it, and use these lessons to achieve specific goals and tasks through autonomy and flexible adaptation. Accordingly, it is based on three main pillars: autonomy, automation, and the ability to learn.

The impact of AI technology on international relations stems from four international characteristics: its ability to multiply power; its strategic advantage (engine advantage) that makes it a driver of international competition; its dual civilian and military uses, resulting in the dilemma of malicious use; and finally, the revolutionary nature of this technology, which makes its spread much faster and accelerates the narrowing of the technological gap between international actors.

¹ Isabella (Xueqian) Huang , *Geopolitical Power Through Critical Mineral Resources: The Strategic Role of Rare Earth Elements in China's Post-2010 Foreign Policy and Its Implications for Energy Security and Global Alliances*, Thesis in Political Science, University of California, USA, 2024, PP. 21, 22

² Francisco Márquez de la Rubia, *op, cit*, PP. 23, 24.

Washington's strategy aims to maintain global superiority in this field and prevent decline, while curbing China's rise as a technological superpower. This strategy includes a set of measures, as follows:

Domestically, it has established specialized agencies, such as the Defense Advanced Research Projects Agency and the National Security Commission on Artificial Intelligence, to maintain itself as a global engine of innovation and excellence, promote domestic innovation and production, and reduce foreign dependence on semiconductors.

Externally, it has restricted China's access to critical components and technologies through tariffs and export controls. It has also barred Americans from working in China's technology sector, restricted US technology investment in China, built alliances to prevent the transfer of artificial intelligence technology to China, urged other countries to ban the use of Chinese companies' equipment, and subjected Chinese companies to trade restrictions.

China's strategy aims to achieve global leadership in AI technology and create a self-sufficient technology ecosystem capable of challenging Western hegemony, as follows:

Domestically, China has circumvented America's technological oppression and transformed it into a strategic advantage, relying on open source technology for its technology industry. It has also attracted international researchers and scientists, repatriated Chinese nationals, particularly those in the United States, and controlled the country's technological innovation by prioritizing industrial security and global influence. It has invested heavily in scientific and technological research and achieved self-sufficiency in vital technologies through the "Made in China 2025" plan.

Externally, it launched the Digital Silk Road, integrating countries into China's digital ecosystem by providing digital resources and developing digital infrastructure for participating countries. It also governed artificial intelligence by establishing global rules and standards that reflect its interests. Beijing also turned Western sanctions into a counter-weapon by depriving American companies of the vast Chinese market, banning the export of rare earths to Washington, and finally marketing its technology globally, to the point where reliance on it became inevitable, even for Washington's allies.

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