

Artificial Intelligence as a Geostrategic Vector in Reshaping the 21st Century Balance of Power

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Abstract

Artificial Intelligence (AI) has moved beyond its status as an emerging technology to become the primary vector of geostrategic competition in the 21st century. This paper argues that AI is not merely a tool but a new domain of confrontation that fundamentally reshapes the metrics of national power. The original contribution of this article lies in identifying and analyzing the critical asymmetry between the components of digital power. While data and talent are diffusing resources, computing power (hardware) represents a "choke point" that dictates the global hierarchy. By analyzing the competition between the United States and China, the work examines how the race for AI supremacy redefines military doctrines and economic alliances. In addition, the study specifies the impact of this competition on NATO's Eastern Flank, demonstrating that for states like Romania, the transition toward algorithmic security is not optional but a survival imperative in the face of hybrid warfare. The paper is structured into four chapters covering the foundations of power, military implications, the "Technological Cold War," and global ideological divergence.

Keywords:

Artificial Intelligence (AI); Geostrategy; Balance of Power; US-China Competition; Technological Cold War; International Security; Algorithmic Warfare, AI Governance; Semiconductors.

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Introduction

The history of international relations is essentially the history of how disruptive technologies have reconfigured power. From the longbow to the steam engine and, eventually, the nuclear weapon, those who mastered the defining technology of an era dictated the terms of the global order. Today, we are at a similar inflexion point. AI represents a revolution of a magnitude that many analysts believe exceeds that of the nuclear revolution. This competition aligns perfectly with the realist school of international relations, which posits that states are in a perpetual struggle for power and security within an anarchic system. AI becomes the latest and possibly most powerful weapon in this zero-sum game. Kissinger, Schmidt, and Huttenlocher (2021) capture this transformation, stating that AI is more than a simple innovation; it challenges the very foundations of human thought and strategic order.

“What lies ahead of us is a potentially even more radical transformation of human consciousness and the human condition... Artificial Intelligence is poised to transform all fields of human experience. Moreover, its strategic implications, which stem from this transformation, are monumental.”

(Kissinger, Schmidt and Huttenlocher 2021, 14)

The geostrategic stakes are perceived at the highest level. In a famous 2017 statement, Russian President Vladimir Putin summarized the competition in clear terms: “Artificial Intelligence is the future, not only for Russia but for all of mankind... Whoever becomes the leader in this sphere will become the ruler of the world” (quoted in [Associated Press 2017](#)).

Unlike nuclear weapons, which are expensive, difficult to develop, and have as their primary utility their non-use (deterrence), AI is inexpensive, rapidly disseminated, and possesses an intrinsic dual nature (civilian and military). It is not just a weapon; it is a force multiplier that simultaneously affects the economy, surveillance, propaganda, logistics, and military command. This paper analyzes how AI functions as a geostrategic vector, becoming the epicenter of the “Great Competition” between the United States and China, a dynamic that evokes “Thucydides’ Trap” ([Allison 2017](#)). The central argument is that the nation that achieves AI supremacy will gain a decisive advantage in shaping the balance of power in the 21st century.

While the existing literature abounds with analyses of the economic impact of AI or the broader US-China competition, this paper makes a distinct scientific contribution by shifting the focus from capabilities to structural vulnerabilities. Unlike approaches that treat AI as a technological monolith, this analysis deconstructs the triad of power (data-algorithms-hardware) to demonstrate that hardware (advanced semiconductors) represents the determinant independent variable of the new world order. Furthermore, the paper extends the theoretical framework beyond the great powers, proposing a necessary analysis of the implications for frontier states (such as Romania) through the lens of algorithmic security.

1. New foundations of national power in the algorithmic era

Traditionally, geostrategic power was evaluated by GDP, population size, military strength, and natural resources. The AI era introduces a new triad of power: data, talent (human capital), and computing power (semiconductors).

1.1. Data as a strategic resource – “The New Oil.”

If oil-based economies dominated the 20th century, the 21st century is dominated by data-based economies, necessary for training deep learning models. China’s structural advantage, theorized by Kai-Fu Lee (2018), lies in massive access to data through a centralized state model, which led him to state that ‘if data is the new oil, then China is the new Saudi Arabia’ (Lee 2018, 18). This immense volume of data allows for the training of more precise algorithms for everything from facial recognition to commercial logistics.

However, the analogy with oil has its limits. Unlike oil, which is a finite resource, data is generative (its use creates even more data), and its value increases when combined. Moreover, it is not just the quantity of data that is important, but also its quality and diversity. Here, the Western ecosystem might hold a long-term advantage: data coming from open and diverse societies could be more valuable for training robust algorithms capable of handling unforeseen scenarios

1.2. The War for talent and innovation ecosystems

AI is a field where a single top-tier researcher can have a disproportionate impact. The competition to attract and retain AI talent is fierce. While the US benefits from elite universities and the draw of Silicon Valley, China utilizes aggressive talent repatriation programs (Allen 2019).

This competition is complicated by the fact that most top talent does not work for governments but for a very small number of private corporations. Amy Webb (2019) argues in *The Big Nine* that the future of AI is controlled by nine giants, six American and three Chinese. This creates a fundamental geostrategic tension: while nation-states (the US and China) are in strategic competition, the critical resources that top researchers control are controlled by corporations whose goals, such as global profit, are not always in sync with national security interests.

1.3. Computing power – hardware as a Choke Point

Algorithms and data are useless without the specialized hardware (primarily GPUs) required to process them. This dependency creates critical geostrategic choke points. Sovereignty in the 21st century means “digital sovereignty” and “chip sovereignty” (Miller 2022).

This choke point is extremely specific and fragile. The entire global AI ecosystem depends on a single technology for producing the most advanced chips (under 7nm): Extreme Ultraviolet (EUV) lithography. This technology is monopolized by a single company worldwide, ASML (Netherlands). Export control of this specific technology represents the West’s most powerful geostrategic weapon.

Miller (2022) argues that the battle for control of this supply chain, which stretches from the Netherlands to Taiwan (TSMC) and South Korea (Samsung), is more important than traditional military battles.

The contribution of this analysis to the specialized literature lies in identifying a critical asymmetry among the components of the triad: while data and talent are diffuse resources, computing power is a finite, geographically constrained, and technologically specific choke point. Unlike analyses that treat the three elements as equally important, this paper argues that hardware is the only absolute barrier that can create an insurmountable gap between global powers in the current decade.

2. The AI-based Revolution in Military Affairs (RMA)

AI is not just changing the tools of war, but its very nature. We are witnessing a Revolution in Military Affairs (RMA) as profound as the introduction of the tank or aviation.

2.1. Algorithmic warfare and Lethal Autonomous Weapons Systems (LAWS)

AI enables the development of Lethal Autonomous Weapons Systems (LAWS), which can select and attack targets without direct human intervention. This radically compresses the “OODA loop” (Observation, Orientation, Decision, Action). Paul Scharre (2018), in *Army of None*, explores the strategic dilemma created by autonomy:

“The speed of war increases as humans are removed from the decision-making loop... This creates intense pressure on nations to develop autonomous systems more quickly to avoid being overtaken. The result could be an unstable, lightning-fast war that humans cannot control.”
(Scharre 2018, 234)

This creates a “stability-instability dilemma” at the tactical level. A state that refuses to delegate lethal authority to machines (for ethical reasons) will almost certainly be defeated on the battlefield by an adversary that does so and operates at machine speed. The awareness of this fact generates a “race to the bottom” regarding human control over violence.

2.2. From C4ISR to C4ISR-AI – Information superiority

Modern warfare relies on information superiority. The integration of AI into C4ISR systems is transformational. AI can fuse and analyze real-time data from thousands of sensors, such as satellites, drones, and cyber sensors, providing commanders with a battlefield picture that no human mind could process. The final report of the National Security Commission on Artificial Intelligence (NSCAI) in the U.S. was clear: “AI superiority is a prerequisite for military superiority” (NSCAI 2021).

However, this information superiority can create its own algorithmic “fog of war”. Adversaries will focus on attacking the training data of enemy AI (data poisoning), causing C4ISR-AI systems to “see” a false reality. Furthermore, there is the risk of a

“battlefield singularity,” in which the volume and speed of information generated by AI exceed the capacity of human commanders to understand it in context.

2.3. Deterrence in the AI Era – A new paradigm of instability

The nuclear era was defined by the strategic stability of Mutually Assured Destruction (MAD). This stability was based on transparency (each side knew what weapons the other possessed) and clear human control over the launch decision.

AI undermines both pillars. First, AI weapons (especially cyber ones) are opaque. It is difficult to know what algorithmic capabilities an adversary possesses. Second, delegating decision-making to machines to speed things up introduces the risk of “accidental wars” (flash wars). An algorithm could misinterpret a signal and escalate a minor conflict into a major one before humans can intervene ([Horowitz 2018](#)).

2.4. Undermining nuclear strategic stability

The most profound impact of AI could be the erosion of nuclear deterrence stability. The foundation of MAD (Mutually Assured Destruction) is the invulnerability of the “second-strike capability,” primarily guaranteed by ballistic missile submarines (SSBNs) hidden in the oceans. AI directly threatens this invulnerability.

Advanced AI systems, coupled with vast sensor networks (including quantum sensors), underwater drones, and satellite data analysis, promise to make the oceans “transparent.” If power can track all enemy SSBNs in real-time, the second-strike capability disappears. This nullifies nuclear deterrence and creates immense pressure on the vulnerable state to launch first (first strike), generating the greatest strategic instability since the Cold War.

2.5. Impact on NATO’s eastern flank and Romania

In the context of regional security in Eastern Europe, Artificial Intelligence no longer serves merely as secondary technical support; it is fundamentally reconfiguring the architecture of NATO’s collective defense. For states in the proximity of revisionist actors, as is the case with Romania, the integration of AI into national security systems ceases to be a mere option for technological modernization and becomes an imperative necessity for survival in the face of hybrid warfare and asymmetric threats. This evolution marks a critical transition from security based on physical presence to an advanced form of digital security, where the speed of algorithmic reactions determines the success or failure of defense missions.

Because Romania depends heavily on C4ISR-AI systems provided by strategic partners, especially the United States, a major geostrategic risk arises from the technical gap between allies’ advanced algorithmic standards and the limited capacity of local infrastructure to process them efficiently. Adversaries can exploit any asymmetry in this regard through “data poisoning” techniques, in which false information is introduced into the data streams of border sensors, misleading automated detection systems, and paralyzing the decision-making capacity of human commanders.

Beyond the strictly military dimension, AI radically transforms the informational front, testing the democratic resilience of the Romanian state. It is crucial to understand that automated disinformation, driven by large language models and deepfake technologies, allows hostile actors to destabilize social cohesion through personalized narratives generated at an industrial scale. Thus, national security begins to depend directly on the existence of a NATO “algorithmic umbrella,” which ensures not only the protection of air and land space but also the integrity of information flows and critical infrastructure by using machine learning to enable ultra-fast intrusion detection.

In conclusion, for Romania, Artificial Intelligence functions as an indispensable force multiplier, compensating for traditional military asymmetries vis-à-vis major regional powers. However, the success of this endeavor depends on Bucharest’s ability to transition quickly from passive consumer of technology to active participant in the Alliance’s algorithmic security ecosystem. Normative alignment with the ethical standards of “techno-democracies” is essential to ensure interoperability with Western partners and to prevent these powerful tools from turning into surveillance mechanisms that could undermine the fundamental values of society.

3. The technological Cold War – The competition for industrial supremacy

If the ideological and military Cold War defined the 20th century, the 21st century is witnessing a “Technological Cold War” (Smith and Browne 2021). This war is being fought on the economic and industrial front, and the stakes are control of the supply chains that power AI.

3.1. “Weaponized interdependence” and the chip war

This is, perhaps, the most important geostrategic arena of the moment. Chris Miller (2022) in *Chip War* demonstrates that advanced semiconductors are a more important resource than oil. That control over their production is concentrated in the hands of only a few companies.

“The future of the global economy and military power depends on the ability to design and produce microchips... Control over this supply chain has become the new geostrategic ‘Great Game’” (Miller 2022, 12)

The entire AI ecosystem depends on chips designed in the US (Nvidia, AMD), manufactured primarily in Taiwan (by TSMC) and South Korea (Samsung), using lithography equipment produced by a single company in the Netherlands (ASML). This dependency has led the US to impose strict export controls (as exemplified by the CHIPS and Science Act) to “strangle” China’s access to high-end technology and slow its AI-based military progress (Allen 2022).

3.2. Civil-Military Fusion (CMF) - The strategic advantage of the Chinese model

While in the US there is a (frequently tense) separation between Silicon Valley and

the Pentagon, China operates under a national strategy of 'Military-Civil Fusion' (MCF). This strategy mandates that private technology companies (such as Huawei, Tencent, and Alibaba) share data, research, and resources with the People's Liberation Army. This centralized model allows the Chinese state to direct the nation's entire innovative potential toward strategic objectives.

This strategy offers speed, but it possesses two strategic vulnerabilities. First, MCF justifies Western sanctions. Since it erases the distinction between a civilian company and a military actor, the US can legitimately argue that the export of any advanced technology to any Chinese company represents a threat to national security. Second, the dependence on a top-down model can stifle disruptive innovation, which often emerges in bottom-up ecosystems specific to Silicon Valley.

3.3. Standardization and the control of norms

A subtle battle is being waged within international standardization bodies, such as the ITU. The nation that imposes its technical standards for 5G, 6G, and future AI protocols gains a strategic advantage, shaping global infrastructure according to its own architecture ([Bremmer 2021](#), 110-120).

The most likely outcome of this battle is not the victory of a single side, but the emergence of a "splinternet"—a bifurcation of the internet and global technological ecosystems. We will have an internet led by the US/West, based on open standards (but overseen by corporations), and an internet led by China, based on state sovereignty and informational control. The geostrategic risk is that every country in the world will be forced to choose a side, creating new digital "Berlin Walls".

The present analysis brings added clarity by highlighting the "dilemma of middle powers". Romania, as a regional technological hub in Eastern Europe, stands at the intersection of security necessity (alignment with US/NATO standards) and the need for economic development based on open markets. This work demonstrates that, in these states, technological neutrality becomes impossible; the adoption of AI infrastructure is equivalent to a de facto alliance.

4. Ideological divergence and new geostrategic blocs

The competition for AI is not only material; it is deeply ideological. The way a society chooses to develop and implement AI reflects its fundamental values, leading to the formation of two distinct blocs.

4.1. "Techno-Autocracy" – AI as a tool for social control

China promotes a model of "techno-autocracy". In this model, AI is used as a tool for mass surveillance, censorship, and social control. The Social Credit System and the ubiquitous surveillance in Xinjiang are clear examples of how AI can be used to perfect authoritarianism ([Zuboff 2019](#)).

Also, China actively exports this model through the "Digital Silk Road" initiative, offering other authoritarian regimes "turnkey" surveillance technology, thereby creating a digital sphere of influence that undermines democratic norms ([Hillman 2018](#)).

4.2. “Techno-Democracy” and the “Brussels effect”

On the other hand, the United States and the European Union are attempting to build a “techno-democratic” model based on ethics, transparency, and the rule of law. The European Union’s AI Act is the most ambitious attempt to regulate AI based on risk.

This bloc faces a strategic dilemma: how to regulate AI to protect democratic values without stifling innovation and losing the technological race to China ([Smith and Browne 2021](#)). This is where a potential geostrategic weapon for Europe comes in: the “Brussels Effect” ([Bradford 2020](#)). Although the EU does not produce tech giants on the scale of the US or China, it acts as a global normative supervisor. Due to the size of the single market, any global company (including Google or Tencent) wishing to sell products in Europe is forced to adopt EU standards (such as those in GDPR or the AI Act). Thus, the EU imposes its ethical standards upon its geostrategic competitors.

The implementation of European regulations on artificial intelligence makes Romania a relevant case study of the global impact of EU policies. Romania’s strategic positioning requires a fine balance between the ethical demands of Brussels and Silicon Valley-style accelerated innovation, to move beyond the status of a passive consumer and assert itself as an active player in the new technological order. This dynamic places Romania in a unique and complex position. As an EU member state, Romania must implement the rigorous AI Act. However, as a strategic partner of the US on the Eastern Flank, it must maintain military interoperability with American systems that sometimes operate on different risk philosophies. Bucharest’s ability to navigate this dual normative loyalty will define its technological profile in the coming decade.

4.3. The Digital “Middle Power” and the new wave of non-alignment

Between these two blocs lie the digital “middle powers” (or “digital swing states”), such as India, Brazil, Indonesia, and African nations. These nations do not wish to be caught in a bipolar confrontation and are trying to navigate between the two technological ecosystems.

These states are not passive actors. The decisions they make, the 5G standard they adopt, and the data regulations they implement will largely determine the final balance of power ([Bremmer 2021](#)). Their choice regarding infrastructure is not a simple commercial decision, but a geostrategy alignment decision that will determine which sphere of influence (authoritarian or democratic) will dominate their region.

Conclusions

Artificial Intelligence has triggered a fundamental reconfiguration of global power. It is not merely a tool of war or an economic engine; it is a geostrategic vector that redefines the very essence of sovereignty, conflict, and international order. Unlike the nuclear era, which concluded in a stable—albeit terrifying—balance, the AI era

promises perpetual instability. Advancements are rapid, opaque, and cumulative. Today's advantage may be irrelevant tomorrow, creating constant pressure for disruptive innovation.

The competition between the US and China for AI supremacy is not just a fight for economic or military dominance; it is a struggle to establish the "operating system" of the 21st century. The outcome will determine whether the future will be shaped by the principles of centralized surveillance or those of regulated individual freedom.

The major challenge for the international community is dual: managing strategic competition in the short term to avoid catastrophic conflict, and, simultaneously, collaborating in the long term to manage the existential risks that advanced AI could pose to all of humanity. Failure in either of these two tasks will shape a much more dangerous 21st century.

At the regional level, the analysis revealed that, for frontline states such as Romania, AI is not a luxury but the new guarantor of sovereignty. In an era of hyper-rapid warfare, the technological gap between Eastern and Western Europe risks becoming a security vulnerability as severe as a lack of military personnel. Therefore, closing this gap through the responsible adoption of AI must become a national strategic priority.

As warned by Stuart Russell (2019), one of the pioneers of AI:

"If we succeed [in creating superintelligent AI], we might have the greatest flowering of civilization... But if we fail, the event of failure could be our last." (Russell 2019, 135)

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