



Artificial Intelligence and its impact on Geopolitics

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ABSTRACT

Artificial Intelligence (AI) has rapidly transitioned from a domain of academic inquiry to a pivotal strategic asset, fundamentally reshaping global geopolitics. Today, the AI has multifaceted impact across military, economic, informational, and societal spheres, highlighting its role as a profound force multiplier that amplifies existing power structures while introducing novel challenges. The analysis reveals an intensifying global AI competition, particularly between the United States and China and to an extent even the G20 nations which is redefining national strength and influencing international relations of the globe. If we consider the military domain, AI fuels an arms race thus driving the development of autonomous weapon systems and enhancing intelligence, surveillance, and reconnaissance capabilities. Economically, AI promises significant efficiencies and cost reductions, yet it simultaneously introduces risks such as data nationalism, a widening digital divide, and the potential for manipulation in global trade. Internally, AI's application in surveillance and political control raises serious human rights concerns, exacerbated by algorithmic biases and data privacy challenges. Social impact is another aspect which has raised deep concerns over the usage of AI. The data tracking and manipulation is steadily becoming a big concern. Despite of the fact that it has efficiently delivered the positives in the field of health, education, creativity but has also raised concerns over the issues of job displacement, lessened migration of workers across the globe,



eventually teasing the geo political strata across the globe. Thus the impact of AI on geopolitics has to be analyzed, scrutinized and thoroughly evaluated to ensure its productive outcome.

Introduction:

Artificial Intelligence and its Intersection with Geopolitics

Artificial Intelligence, in its broadest sense, refers to any software system capable of resembling the natural intelligence. Such systems can observe their environment, gather data, and use that information to make improved decisions, often learning and adapting through interactions. This includes a wide array of machine-based systems designed to make predictions, offer recommendations, or execute decisions that influence real or virtual environments. The intersection of AI with geopolitics arises from its diffusive but pervasive, and often unpredictable influence, which is fundamentally redefining national power through control over data, technological innovation, and the infrastructure that supports it. Historically the evolution of AI in geopolitics reflects a very strong statement which states that Countries and companies will clash in new ways, and AI could become an actor, not just a factor. ***(1)** The formal genesis of Artificial Intelligence as a distinct field of research is widely attributed to the Dartmouth Summer Research Project on Artificial Intelligence in 1956. ***(2)** Organized by John McCarthy, who is also credited with coining the term "artificial intelligence," this workshop brought together pioneering minds to explore the ambitious goal of enabling machines to use language, form abstractions, solve problems typically reserved for humans, and even improve themselves. The current transformative moment in AI is characterized by the rapid evolution of generative AI. Unlike earlier AI models primarily focused on prediction and pattern recognition, generative AI adds the capability of "generation to pattern recognition," producing unique outputs such as new sentences, images, or even computer code based on learned patterns. The historical progression from purely academic curiosity to a strategic national interest, evident in early military funding and the current global competition, indicates that AI's geopolitical impact was inherent from its nascent stages. This trajectory suggests that the ongoing AI competition is not a novel phenomenon but an acceleration of a long-standing strategic imperative, where technological supremacy is now as vital as traditional military power.

AI as a Strategic Asset Fundamentally Reshaping Global Power Dynamics

The central premise of this perspective is that AI has become an indispensable element of national strategy. Leading global powers now regard AI capabilities as fundamental to their national strength and sovereignty. The influence of AI is not confined to specific sectors rather it is diffuse, pervasive, and



inherently unpredictable, making it both a powerful tool for national empowerment and a potential source of profound instability in the international system. Consequently, geopolitical influence in the 21st century is increasingly measured by a nation's capacity to innovate in AI, control the underlying technological infrastructure, and effectively regulate its application. This dynamic has ignited an intense "AI arms race" among major powers, most notably between the United States and China, fundamentally redefining global power dynamics. The current landscape of Artificial Intelligence is marked by rapid advancements, emerging trends, and an intense global competition that is reshaping technological and geopolitical power. Understanding these elements is crucial for comprehending AI's broader impact. As a subset of AI, Machine Learning focuses on enabling programs to adapt and improve when exposed to new information, without explicit reprogramming. ML software can discover novel and more efficient methods for decision-making by teaching itself through data analysis. Its primary functions revolve around prediction and the recognition of patterns within data.

Today, generative AI is talk of the time. Representing a significant leap beyond traditional ML and DL, generative AI incorporates "generation to pattern recognition". It is designed to produce unique, novel outputs—such as new sentences, images, or even code—based on the patterns it identifies in its training data. Built on advanced transformer architectures, generative AI excels at producing "high quality, human-like material" and has democratized access to powerful Large Language Models (LLMs).

Current State of AI Capabilities: Benchmarks, Real-World Applications, and Advancements

The capabilities of AI systems have advanced dramatically, as evidenced by performance on rigorous benchmarks and their increasing integration into daily life. AI is no longer confined to laboratories. It is increasingly embedded in everyday life particularly in military and geo politics. Artificial Intelligence is fundamentally revolutionizing military capabilities, strategic planning, and the very nature of warfare, igniting an intense global arms race that has profound geopolitical implications. Nations worldwide are aggressively leveraging AI's military applications, fueling an unprecedented arms race and introducing complex security dilemmas. AI is no longer merely a technological enhancement, it is increasingly viewed as a critical strategic asset essential for national security, prompting governments to invest heavily in military AI. The competition for AI supremacy has intensified, particularly between the United States and China. By 2025, China's rapid advancements in AI were reported to have narrowed the U.S. lead to "mere months," a development described as an "AI Sputnik moment," evoking Cold War anxieties.***(3)** AI capabilities are now widely perceived as a "game-changer" with the potential to decisively shift the balance of economic and military power. This intense competition has led to strategic



measures such as export controls on advanced AI chips and concerted efforts to build robust domestic AI ecosystems specifically for defense applications. Other countries are also actively participating in this race to acquire AI technology, thereby raising the stakes in global alliances and rivalries. The AI arms race is forging a new type of geopolitical competition where technological supremacy is as crucial as traditional military might, leading to the formation of new alliances and rivalries based on shared technological capabilities and AI-driven economic interests.

One of the most significant and controversial developments in military AI is the rise of Autonomous Weapon Systems (AWS). These systems are capable of identifying, targeting, and even engaging adversaries without direct human intervention. Recent India Pakistan struggle during Operation Sindoor, reflected this technique. Autonomous drones and combat robots are already in use, demonstrating the operational advantages of these technologies. The rapid proliferation of AWS is evident in ongoing conflicts, such as in Ukraine, where both sides have deployed drones with advanced targeting and decision-making capabilities. Russia's reported production of over a million drones in a single year underscores the rapid scalability of these technologies. AWS challenge established legal requirements to distinguish between civilians and combatants, assess proportionality, and take necessary precautions in attacks. International efforts to regulate AWS have been slow despite a decade of discussions. The issue first formally appeared on the international agenda in 2013, and the Convention on Certain Conventional Weapons (CCW) established an expert group in 2016 to explore regulatory options.* (4) While this group has agreed on guiding principles, the need to retain human responsibility, progress is hampered by substantive disagreements, ineffective consensus-based working methods that allow individual states to block progress, and a backdrop of rising geopolitical tensions. The precise definition of "meaningful human control" remains a contentious point. AI has dramatically accelerated the speed, precision, and scale of cyber attacks, elevating cyber warfare to a battlefield domain equivalent to land, air, and sea. AI algorithms assist in all phases of social engineering attacks, from identifying ideal targets and developing convincing personas and online presences to crafting realistic scenarios and writing personalized messages or creating multimedia assets to engage the target.

The Future of Warfare: Implications for Operational Concepts, Force Structures, and Strategic Stability

AI promises to revolutionize warfare, potentially removing many of the limits imposed by human intelligence as a constraint on military operations. This necessitates a re-evaluation of traditional operational concepts and force planning. Militaries that fail to embrace strategies of mass and deception



may find themselves at a serious disadvantage, as relying on small force structures with exquisite capabilities is rapidly becoming a liability. AI could enable the creation of "fog-of-war machines" capable of orchestrating sophisticated deception campaigns using large numbers of advanced decoys. Furthermore, cyber defenses are expected to benefit significantly from AI, making battle networks more resilient against attacks by addressing current limitations in scale and speed. Exploiting AI's military potential is as much an organizational challenge as it is a technological one. It will require disruptive changes to how militaries traditionally organize and operate. Despite AI's burgeoning capabilities, the human factor in leadership decision-making remains critical. AI systems can produce false or misleading information and are vulnerable to hacking. Large Language Models (LLMs) can "hallucinate" or be fed biased, unreliable, or incomplete data, leading to erroneous outputs. Human imperfections in software development also create attack surfaces that adversaries can exploit to manipulate AI technology. Therefore, there should always be a "human-in-the-loop" or at minimum "human-on-the-loop" element for critical decisions, as human adaptability, creativity, and "gut feeling" are indispensable. While AI and robotic decoys could be useful for hiding nuclear forces, potentially reducing the risk of AI upending strategic stability between peer competitors, the unchecked development of AI for military use could destabilize regions and lead to unintended escalation.

The true challenge for militaries lies not merely in acquiring advanced AI technology, but in fundamentally reorganizing to effectively integrate human and AI capabilities. This entails developing new doctrines, training regimes, and command structures that can leverage AI's speed and analytical power while ensuring human ethical judgment, adaptability, and accountability remain paramount. Nations that fail to adapt their organizational structures to facilitate seamless human-AI teaming risk being outmaneuvered, not just by technologically superior adversaries, but by those who have mastered this complex organizational transformation.

AI's Impact on Information Warfare and Disinformation

The advent of Artificial Intelligence has fundamentally transformed the information environment, establishing it as a new frontline in geopolitical competition. AI now enables sophisticated disinformation campaigns and reshapes the battle for public perception. AI significantly enhances disinformation, making it "cheaper, easier, and more effective" to produce and disseminate. Synthetic video content, commonly known as deepfakes, has become a permanent feature of the digital ecosystem, subtly shaping perceptions and influencing political and social decisions globally. AI is deeply integrated into hybrid warfare strategies, which blend conventional military tactics with cyberattacks and



disinformation. This approach exploits the openness and connectivity of modern societies to destabilize governments and deepen internal divisions. Disinformation operations powered by AI are far more scalable and difficult to detect than traditional methods, acting as a potent "multiplier" in hybrid warfare scenarios. Deepfakes are AI-generated video, image, or audio files designed specifically to deceive. Beyond mere entertainment, they are maliciously employed in disinformation campaigns, "fake news" narratives, or smear campaigns targeting high-profile individuals. AI in information warfare, however, is a "double-edged sword," utilized by both sides of a conflict. Ukraine has also deployed AI in support of its military operations, for instance, to manipulate public sentiment and disrupt Russian defense strategies.

Challenges and Strategies for Countering AI-Enabled Disinformation

The pervasive nature of AI-generated content makes it increasingly "difficult to detect truth" and can "flood the media landscape" with content ranging from "meaningless drivel at best and misinformation at worst". This proliferation contributes to the increase of misinformation and polarization, leading to fractured geopolitical landscapes, ideological echo chambers, and mutual distrust. AI's capability to tailor messages to voter behavior raises concerns that it could be used not just for market purposes but also to discourage individuals from voting, thereby undermining democratic participation. The widespread availability of inauthentic content erodes trust in the entire information ecosystem, including traditional media and government institutions. The ability of AI to make disinformation "cheaper, easier, and more effective" leads to the mass production of synthetic content, which in turn "erodes trust in the entire information ecosystem". The highly personalized and realistic nature of AI-generated fake content makes it increasingly difficult for individuals and institutions to discern truth. AI enables the tailoring of messages to voter behavior, the creation of "false constituent sentiment," and the revolutionary potential for disinformation campaigns combined with microtargeting. This is not merely about influencing; it is about "sowing discord" and "undermining democratic stability". The problem is exacerbated by the rapid pace of AI development and the often reactive nature of current democratic responses. This indicates that AI is accelerating a new form of "cognitive warfare," where the primary battlefield is the human mind and public perception. Adversaries can now wage campaigns that are highly scalable, precise, and difficult to detect, directly targeting the cognitive processes and social cohesion of democratic societies. The challenge for democracies is not merely to counter specific pieces of disinformation, but to build systemic resilience against a continuous, AI-driven assault on their information environment and social trust. This necessitates a shift from reactive damage control to proactive, comprehensive strategies that



include technological defenses, media literacy, and robust international cooperation to protect democratic processes from this evolving threat. Legislative bodies should mandate greater transparency for AI-created and curated election content. This includes requiring AI developers, social media platforms, and search engines to publish information on the volume of political deepfakes, implement watermarks and content provenance standards, and establish policies for responsible dissemination of AI-generated content. Developers of generative AI should also be required to disclose the sources of their original training datasets. Laws should be updated to allow agencies to disregard comments that falsely impersonate others, are bot-generated, or are otherwise incorrectly attributed, which will become easier with generative AI. Current approaches by organizations like NATO have often been reactive. A proactive posture is essential, treating disinformation as a core national security threat. This requires improving real-time detection systems, boosting cross-border collaboration, and developing ethical offensive strategies to counter disinformation with equal force.

AI's Impact on Societal Stability, Governance, and Human Rights

AI technologies are rapidly becoming a powerful new instrument of political control, actively utilized by authoritarian regimes to monitor and regulate the behavior of their citizens. A prominent example is the Chinese government's extensive use of AI for mass surveillance, social credit systems, and population control, particularly in regions like Xinjiang. This creates a pervasive feedback loop of compliance or punishment that enforces rules at granular levels of society. Critically, China is actively exporting this "techno-authoritarianism model" to other nations eager to replicate its efficiency. Governments globally are deploying AI for sophisticated surveillance, threat detection, and cybersecurity measures, monitoring communications, predicting terrorist activities, or countering foreign influence campaigns, making AI a linchpin of national security. AI-driven consumer products and autonomous systems are frequently equipped with sensors that collect vast amounts of data without the explicit knowledge or consent of individuals in their proximity. AI applications possess the capability to identify and track individuals across various devices, within their homes, workplaces, and public spaces, even de-anonymizing previously pseudonymized data. Facial recognition technology, in particular, has the potential to fundamentally transform expectations of anonymity in public spaces. This pervasive use of AI surveillance can infringe on individuals' right to privacy, creating a constant sense of being watched and leading to a "chilling effect" on individual behavior, resulting in self-censorship and a reduction in personal freedom and autonomy. Ultimately, AI surveillance can be leveraged as a tool for social



control, enabling governments or corporations to monitor and influence individual behavior, potentially leading to a loss of agency and increased manipulation.

Data Privacy in the AI Age: Concerns Regarding Re-identification & Data Exploitation

The pervasive nature of AI introduces several unique and exacerbated data privacy concerns like difficulty in understanding precisely how an AI algorithm collects, uses, alters data, or makes decisions based on that data. This opacity can arise from the inherent complexity of the algorithms, purposeful concealment by companies (e.g., trade secrets), or the unpredictable nature of machine learning models even to their creators. This lack of transparency severely limits the ability to inspect or regulate the AI system in question. Data Repurposing is another aspect where data is used beyond its original, stated purpose and without the data subject's knowledge or consent. In an AI context, biographical data collected for one purpose might be fed into an algorithm that learns patterns and recombines existing datasets in unforeseen ways. For example, health care records digitized for easy transfer between providers might later be used by hospitals and insurers to determine individual health risks or eligibility for treatment, a purpose not originally intended. Generative AI poses significant threats to three central pillars of democratic governance: representation, accountability, and ultimately, public trust. Despite these efforts, significant challenges persist. Geopolitical tensions often influence and impede efforts to create comprehensive global frameworks for AI development and deployment. Regulatory gaps remain due to the rapid pace of AI development, making it difficult for policymakers to keep pace. Expertise and innovation in AI predominantly reside within private corporations, emphasizing the need for public-private partnerships and ethical oversight to ensure that public interests are not sidelined by commercial imperatives. Furthermore, in many regions, political and economic imperatives often outweigh ethical concerns, sometimes at the expense of societal and human rights protections. AI development frequently relies on labor and data harvesting from developing nations, where workers often label data and curate content under exploitative conditions, leading to calls for better safeguards.

International Cooperation, Competition, and the Future Global Order

The integration of Artificial Intelligence into every facet of human activity is fundamentally reshaping international relations, dictating a complex interplay of cooperation and intense competition that will define the future global order. The escalating competition between the United States and China in the field of AI is arguably the most defining geopolitical rivalry of the 21st century, profoundly reshaping bilateral relations and the global balance of power. Both superpowers recognize AI as a strategic



imperative for redefining state power, enhancing military strength, and ensuring economic dominance. They have channeled vast resources into AI's development, competing fiercely across multiple domains. Both nations are leveraging AI for economic growth, industrial revolution, and long-term economic supremacy. China, through its 2017 Next Generation AI Development Plan, aims for AI to be a fundamental catalyst for economic change by 2025 and to become the global leader in AI by 2030. In response, the U.S., under the National AI Initiative Act of 2020,⁽⁶⁾ focuses on enhancing AI research investment, optimizing federal AI computing and data resources, setting technical standards, building a robust AI workforce, and fostering international collaborations to maintain its economic position. The U.S. has also imposed trade restrictions, export controls, and tariffs on Beijing to obstruct China's AI progress, particularly limiting access to advanced semiconductors. Despite these efforts, China is rapidly innovating in semiconductor manufacturing and chip production, as evidenced by the recent breakthrough of its large language model (LLM), DeepSeek, which has reportedly surpassed models from prominent U.S. AI companies in performance and cost efficiency. Shifting Alliances and the Global Race for Technological Supremacy beyond the Superpowers

The escalating U.S.-China rivalry is not merely a bilateral struggle but a transformative force reshaping the global order, with far-reaching ripple effects on geopolitics and technology. A significant consequence is the fragmentation and polarization of the global landscape, as smaller nations often find themselves caught between the two superpowers, compelled to align with one side due to economic dependencies, technological aspirations, or strategic needs. This dynamic leads to a fragmented global AI ecosystem as nations gravitate towards distinct spheres of influence, making AI a catalyst for reshaping global cooperation and competition.

Beyond traditional alliances, this rivalry fuels a broader global race for technological supremacy. Various countries, including the UK, Canada, France, Singapore, India, South Korea, and Israel, are actively positioning themselves as key players in AI to assert their sovereignty and secure their place in the evolving technological hierarchy. While the U.S. and China currently dominate global AI power rankings, other nations are devising strategies to close the gap, underscoring how the AI race is altering the global power structure and compelling smaller nations to make strategic decisions that profoundly impact international relations.



Conclusion: Navigating the AI Geopolitical Crossroads

Artificial Intelligence has irrevocably transformed the global geopolitical landscape, evolving from a scientific curiosity into a fundamental strategic asset that redefines national power and international relations. Its pervasive influence has ignited an intense global AI competition, most notably between the United States and China, which is reshaping military doctrines towards autonomous systems and advanced cyber warfare. AI functions as a dual-use technology, offering immense economic efficiencies while simultaneously introducing new vulnerabilities such as data nationalism, a widening digital divide, and the risk of AI-driven trade manipulation. The information environment has become a critical new frontline, where AI enables sophisticated disinformation campaigns that erode epistemic and social trust, posing a direct threat to democratic resilience. Internally, AI's application in surveillance and political control raises profound ethical dilemmas concerning human rights, privacy, and accountability, further exacerbated by algorithmic biases and data privacy challenges. A defining characteristic of this era is the fragmented global governance landscape, marked by divergent national approaches and a persistent gap between rapid AI innovation and the slower development of regulatory frameworks.

Humanity stands at a critical geopolitical crossroads regarding AI. One path leads to increased global fragmentation, where AI becomes a primary driver of protectionism, technological decoupling, and intensified rivalries, potentially resulting in a less stable and equitable world order. The other path, though challenging, involves a conscious shift towards collective stewardship, where nations prioritize shared ethical principles, collaborative governance, and equitable access to AI benefits. The choices made by leading powers and international bodies in the coming years will determine whether AI becomes a force that exacerbates global divisions or one that, through deliberate cooperation, fosters a more interconnected and stable future. This highlights the urgent need for a "Global Digital Compact" that moves beyond rhetoric to actionable, inclusive frameworks.

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