Algorithmic Deterrence: U.S.-China Arms Race

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Algorithmic Deterrence: How Military AI Fuels Global Instability in the U.S.-China Arms Race

Artificial intelligence and its application in defense have been developing rapidly, changing the global security landscape and adding new layers of complexity that could increase global insecurity and pose serious threats to international peace and stability. This essay argues that integrating AI into autonomous weapon systems (AWS) and military strategies by both the United States and China creates unpredictable risks and the potential

escalation of conflicts. Unlike traditional military technologies, AI enables autonomy and can accelerate and enhance decision-making processes by processing large amounts of data and selecting useful information in ways humans cannot (Schraagen, 2024).

The militarization of AI promises great potential, but the unintended consequences are even greater. To combat the significant risks created by the proliferation of military AI, it is necessary to establish global governance and rules that nations must follow. Principles of responsible AI must be integrated to prevent the potentially disastrous consequences of military AI. Protective frameworks and governance mechanisms are the best way to mitigate the risks posed by this technology (Garcia, 2023). The AI arms race is not just a technological competition; it is a destructive force that demands international governance to preserve global security and peace.

Following this brief introduction, there will be an overview of the AI arms race between the US and China, focusing on their significant investments in military AI, particularly in AWS. The third part of this paper will explore the unpredictability and risks associated with the deployment of AWS and the potential for conflict escalation that could impact global security. Finally, I will discuss the need for global governance as a means to de-escalate the threat posed by AWS and the militarization of AI by both countries, while also advocating for the implementation of responsible AI principles to reduce the risk of global instability.

II.I. The United States:

The military AI race for the United States began in 1983 when the American government invested one billion dollars in strategic computing (Haner & Garcia, 2019). In particular, autonomy has been a key component in the U.S. national security strategy since Directive 3000.09 from the Department of Defense (DoD) was announced in 2012. This directive was the very first to permit semi-autonomous systems to strike down targets that had previously been identified by human operators. It also allowed for fully autonomous weapons to choose and engage with targets after a senior-level authorization from the DoD (Haner & Garcia, 2019). Six years later, the U.S. National Defense Strategy put particular focus on AI development in defense, and in 2020, the National Defense Authorization Act (NDAA) cited AI exactly eleven times (Hunter et al., 2023). These events prompted the U.S. to intensify its efforts to advance artificial intelligence in defense. According to the Congressional Research Service, all the branches of the U.S. military are actively working to integrate AI into semi-autonomous and autonomous systems, including fighter jets, drones, land-based vehicles, and naval ships. The creation and establishment of the Joint Artificial Intelligence Center (JAIC) in 2018 was another milestone, intending to speed up the deployment of these AI technologies and increase its influence across the DoD for "joint force advantage." The JAIC took the lead to implement AI into all

branches of the military, and as a result, the Army allocated $6.5 million for AI-related training, including simulations and virtual reality, according to the Department of Defense's 2019 budget report (Hunter et al., 2023). In 2021, $1.5 billion of the DoD budget was invested toward microelectronics and 5G infrastructure, which are key components to the advancement of AI technologies. Another $1.7 billion was put towards autonomous systems to improve their mobility and speed in both semi-autonomous and fully autonomous vehicles, but also to enhance human-machine collaboration. Furthermore, $800 million was dedicated to AI initiatives such as AI Pathfinders, the Joint Artificial Intelligence Center (JAIC), and Project Maven (Hunter et al., 2023).

Some examples of autonomous weapon systems utilized by the U.S. can be found in the Air Force, which allocated $87 million in 2019 for AI-based wargaming and training. AI-powered autonomous piloting systems are being developed with the goal of independent aircraft operation and to even assume full control in missions. μZero, for example, was a program designed to fly a U-2 stealth aircraft, and it successfully did so in 2019. Similarly, the X47-B program, an autonomous piloting system, was meant to perform autonomous landings as well as aerial refueling, though later discontinued due to performance and funding issues. Despite shortcomings, the American Air Force and Navy continue to work together on AI-enabled weapons like the Long-Range Anti-Ship Missile (LRASM), which incorporates autonomous targeting capabilities (Hunter et al., 2023). The Navy and Marine Corps have also invested heavily in integrating AI for both training and combat purposes. Through the Navy's rapid prototype development program, a $49 million investment was made to add AI into combat systems, resulting in new submarine combat assets. The U.S. Navy has also researched AI-guided missile systems, which produced Tomahawk Anti-Ship Missiles (TASM) and LRASM stealth anti-ship cruise missiles. There is also Cognitive Lethal Autonomous Weapons Systems (CLAWS), which is a prototype submarine that is being developed with onboard AI authorized to detect, assess, and respond to threats autonomously using 12 torpedo tubes, which is expected to have a significant impact on marine warfare (Hunter et al., 2023).

Garcia, D. (2023). The AI military race: Common good governance in the age of artificial intelligence. Oxford University Press. Available at: https://research.ebsco.com/linkprocessor/plink?id=a0a04cbe-58f1-347a-a0b5-e584fed215ed

Haner, J., & Garcia, D. (2019). The artificial intelligence arms race: Trends and world leaders in autonomous weapons development. Global Policy, 10(3), 331–337. https://doi.org/10.1111/1758-5899.12713

Hunter, L. Y., Albert, C. D., Henningan, C., & Rutland, J. (2023). The military application of artificial intelligence technology in the United States, China, and Russia and the implications for global security. Defense & Security Analysis, 39(2), 207–232. https://doi.org/10.1080/14751798.2023.2210367

Schraagen, J. M. (2024). Responsible use of AI in military systems. Taylor & Francis. Available at: https://research.ebsco.com/linkprocessor/plink?id=85cdd54b-e3b4-3313-917b-23b25da9933d

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