

Dangerous Technology: Modern Threats Posed by China and Russia



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Abstract

The emerging technology from China and Russia pose potential serious threats for the US. In this intelligence report, key technologies in China and Russia are analyzed for their threat potential, weaknesses, and overall stake in the race to come out as the most technologically advanced military. These technologies include AI, Space Capable Assets and UGVs, all of which present concerns for national defense and international peace.

Key Judgement

1. We believe that emerging technology in foreign countries will pose a threat to the US.
2. We believe that China is the world leader in the field of technological advancements.
3. We believe that China is making advancements in AI technology.
4. We believe that China is developing space technologies for military operations.
5. We believe that Russia is also a threat in technological advancement.
6. We believe that Russia is developing AI technology for military application.

Analysis

Throughout history, it was often true that whichever side of a military conflict had the most advanced technology, was the side likely to emerge from the conflict victorious. World powers are constantly racing to be the most technologically advanced nation so that, in the event of an armed conflict, they might have an edge and emerge victorious, or at the very least, be secure. The United States is concerned with monitoring the emerging technology of foreign countries for this very reason. The US is primarily focused on China, as they are widely regarded as the leaders of technological advancement in the world. Though China's technological advancements branch into a wide range of application fields, this paper focuses on the military applications specifically, or those which pose the most profound threat to US. Artificial Intelligence (AI) prospects. Space assets are another potentially threatening technology coming out of China due to China's future operation plans for the military application of space technology. Russia also presents a prevalent concern for the US as they have, for the last half-century, established themselves as a global power in research and development. However, it is important to note that Russia is not as advanced as China, or even the US, but still their focus on developing AI technology for military application; UGVs (Unmanned Ground Vehicles) present merit for concerns.



Assessment

Emerging technology has always been a key concern for the US. Being “ahead of the game” in the field of technology is crucial to promote peaceful advancements among the world powers. But to remain objective and never naive, we note that the two most threatening countries in this regard are China and Russia. Although there are other countries such as India with a growing mission of technological development, here we are discussing the two countries that the US views as the most historic and, thus, probable threat.

Throughout the 20th century, technological innovation is what made the US one of the most powerful nations in the world. Recently, however, the scale has seemingly tipped to the side of China, enabled by the largest command-driven market, centralized government, and coordination between private sector and state technology research. These factors have given the Chinese the resources necessary to make unprecedented leaps in technological development in the fields of artificial intelligence and space capable assets. This has led to the US taking a particular interest in the emerging technology and technological advancements of China.

One of the main technological threats that the US is monitoring is artificial intelligence. AI is seen by many as the next breakthrough in military technology due to the numerous applications it could have if developed to a certain level of proficiency. One of the advantages of military applied AI is the notion that it could reduce the endangerment of human life in warfare. However, this could also be the downfall of AI application, as many believe that if it were less costly on human life to go to war, countries would choose to go to war more readily. Because of this, the US monitors its rival’s developing AI technologies. China is the largest concern, as they have been shown to have incredibly advanced AI technology, as well as their New Generation Artificial Intelligence Development Plan of China, which describes China’s plan to develop advanced AI to use in various capacities through 2030. China has a specific focus on the military application of AI, which is why the US views this technology as such a threat in the hands of the Chinese. China plans on increasing the precision,

speed, and effectiveness of future military operations using advanced AI-assisted systems.

Another technological threat emerging from China is the possibility of space warfare technology. Although the idea of space warfare sounds like science fiction, it is becoming increasingly more possible as the boundaries between physics and computing are being tested. As revealed in the China Space and Counterspace Report, China is researching space capable asset technology, and they are likely to become the dominant force in this emerging field. The basic concept of space capable assets is through satellites or spacecraft that are directed towards



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armed intervention rather than merely surveillance. If joint firepower strike operations become operable, which would specifically target Taiwanese and US persons of interest for elimination, the game field of war and the threat of atomic contingencies approach apocalyptic levels. Additionally, China is researching joint blockade operations of space assets in a prelude to an invasion of Taiwan. Although this technology seems far off, China appears quite confident in their capabilities as a diversified nation invests much of its time, intellectual and financial resources.

Although not nearly as advanced in the field as China, Russia has a long history of tension with the US, now exacerbated with AI as the current pinnacle of technological capabilities and the

expansion outward from the limitations of the past. Russia's belief is that whichever country is the leader of AI technology, will be the leading world power. Despite this mantra, Russia is noticeably behind both China and the US in AI advancements. Russia's AI development programs are unique, however, given that jurisdiction of research and development are directed solely by state-owned firms, rather than any private sector or political interest groups. Ultimately, this seems due to deep-founded distrust between the Russian government and private-sector tech companies looking towards the intrinsic value of innovation rather than geopolitical "tech races." The state-owned firm Sberbank is Russia's primary researcher and developer of AI technology.

Though being far less organized and capable in AI development than the US or China, Russia is still pushing AI research in hopes of finding sufficient military application. One of these military applications that Russia has found for AI is unmanned ground vehicles (UGVs). Russia has been found testing UGVs in Syria, and has seemingly made significant development in the application of this technology for military operations. The benefits of such technology would be the reduction of human lives risked in warfare, and the coordination of a centrally controlled fleet of UGVs, adding to the effectiveness of coordinated strikes.

The implications of China and Russia possessing these technologies is concerning beyond the mere implications of what public life will look like in the East. AI is such a new field of technology that the US does not have extensive knowledge on how to combat technology, primarily regarding AI operated hacking programs. Thus, creating a "national insecurity" in the field. A program with AI could potentially rewrite its code to hack through firewalls while remaining largely untraceable. AI operated UGVs are a less severe threat however, as EMP weapons would likely be highly effective at disabling these vehicles. Space capable assets from China could be devastating if they possessed the ability to perform orbital strikes against US targets. The best defense against this that the US possesses is anti-satellite weapons which could eliminate these space capable assets in a preemptive strike.

China is responsible for numerous covert actions against the US in the form of cyber and drone attacks and possibly preparing for an invasion of Taiwan, one of the allies of the US. Similarly, Russia is massing troops on the Ukrainian border and making demands for the nation to relinquish its territory, pointing towards Russia's interest in reclaiming the territory they lost post WWII. So in order for the US to remain strong in its defense of freedom, not only domestically, but also for its allies abroad, it is imperative that the US maintains a close watch of the emerging technologies coming out of these two countries, in order that the US might be able to better counteract whatever conflicts arise involving these technologies.

We conclude that a close watch on the development of emerging technology in China and Russia is prudent for the safety of the US. The potentially catastrophic consequences of an unforeseen attack utilizing one or more of these technologies is reason for the US intelligence community to conduct counterintelligence operations but also perpetuates further dilemmas concerning global power competition, privacy and liberty for Americans and our allies, and the future landscape of AI relations among nations and the citizens they wish to protect.

References

- [1] Office of the Director of National Intelligence, Annual Threat Assessment of the U.S. Intelligence Community, (April 9, 2021): pp 20
- [2] Can Huang, Naubahar Sharif, "Global Technology Leadership: The Case of China," Science and Public Policy 43, no. 1 (February 2016): pp 62-73
- [3] Fei Wu, Cewu Lu, Mingjie Zhu, Hao Chen, Jun Zhu, Kai Yu, Lei Li, Ming Li, Qianfeng Chen, Xi Li, Xudong Xoa, Zhongyuan Wang, Zhengjun Zha, Yueting Zhuang, Yunhe Pan, "Towards a New Generation of Artificial Intelligence in China," Nature Machine Intelligence 2 (June 16, 2020): pp 312-316
- [4] Elsa Kania, "'AI Weapons' in Chinese Military Innovations," Global China (April 2020)
- [5] Mark Stokes, Gabriel Alvarado, Emily Weinstein, Ian Easton, "China's Space and Counterspace Capabilities and Activities," (March 30, 2020)
- [6] Stephanie Petrella, Chris Miller, Benjamin Cooper, "Russia's Artificial Intelligence Strategy: The Role of State-Owned Firms," Orbis 65, no. 1 (2021): pp 75-100
- [7] Ash Rossiter, "Bots on the Ground: an Impending UGV Revolution in Military Affairs?," Small Wars and Insurgencies 31 no. 4 (June 5, 2020): pp 851-873
- [8] Oriana Mastro, "The Taiwan Temptation: Why Beijing Might Resort to Force," Foreign Affairs 100, no. 4 (July/August 2021): pp 58-67
- [9] Eray Alim, "'Decentralize or Else': Russia's Use of Offensive Coercive Diplomacy against Ukraine," World Affairs 183, no. 2 (June 2020): pp 155-82