



# 2022 AI Policy Global Update: Russia



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# State of AI in Russia

In 2017, President Vladimir Putin revealed Russia's aspirations for artificial intelligence (AI) by stating that "whoever becomes the leader in this sphere will be the ruler of the world."<sup>1</sup> Russia's first major step forward in becoming AI-capable was in 2016 when Sberbank—the leading state-owned bank—started a venture capital fund that prioritized investment in startups focused on AI and big data.<sup>2</sup> Unlike in the United States and China, where government cooperation with the commercial sector is driving AI advancement, the maturation of AI technology is handled by state-owned firms, of which Sberbank is the leading actor. Russia has announced plans to spend \$2.91 billion (U.S., as of March 30, 2022) on AI development through 2024 and almost half of the investment is coming from Sberbank, while the rest will fall under the federal budget.<sup>3</sup>

A map of the Russian AI ecosystem drafted by MIPT showed the presence of 420 AI companies in February 2021.<sup>4</sup> This is much smaller than just the startup ecosystems of either the U.S. or China, which have 8,161 and 1,226 startups respectively.<sup>5</sup> Additionally, Russian companies' advancement in AI may be stymied by recent Western sanctions in response to Russia's invasion of Ukraine. The sanctions have started squeezing Russia's technology ecosystem and driving an exodus of IT talent from Russia, which has the potential to negatively impact its AI ambitions.<sup>6</sup>



1 Associated Press, "Putin: Leader in Artificial Intelligence will Rule World," CNBC, September 4, 2017, <https://www.cnbc.com/2017/09/04/putin-leader-in-artificial-intelligence-will-rule-world.html>.

2 Stephanie Petrella, Chris Miller, and Benjamin Cooper, "Russia's Artificial Intelligence Strategy: The Role of State-Owned Firms," Foreign Policy Research Institute (Winter 2021), doi: 10.1016/j.orbis.2020.11.005.

3 Nikolai Markotkin and Elena Chernenko, "Developing Artificial Intelligence in Russia: Objectives and Reality," Carnegie Moscow Center, May 8, 2021, <https://carnegie.moscow.org/commentary/82422>.

4 Jeffrey Edmonds et al., "Artificial Intelligence and Autonomy in Russia," Center for Naval Analyses, (May 2021), [https://www.cna.org/CNA\\_files/centers/CNA/sppp/rsp/russia-ai/Russia-Artificial-Intelligence-Autonomy-Putin-Military.pdf](https://www.cna.org/CNA_files/centers/CNA/sppp/rsp/russia-ai/Russia-Artificial-Intelligence-Autonomy-Putin-Military.pdf).

5 Petrella, Miller, and Cooper, "Russia's Artificial Intelligence Strategy: The Role of State-Owned Firms."

6 Brendan Bordelon, "Russia's AI Industry Faces Collapse," POLITICO Morning Tech, March 8, 2022,

# Overview of AI strategy

In October 2019, Russia adopted its *National Strategy for the Development of AI Through 2030*, coordinated between commercial companies—mostly state-owned—and the Russian government.<sup>7</sup> This was Russia's first national strategy focused on advancing its AI capabilities, particularly for military applications. The document places particular focus on defining key AI-related terminology such as AI itself, which is described as “a set of technological solutions that makes it possible to simulate human cognitive functions (including self-learning and seeking solutions without a predetermined algorithm), as well as to obtain results during the performance of specific tasks that are at least comparable to the results of human intellectual activity.”<sup>8</sup> It also outlines objectives and means for Russia to develop and use AI technologies. The provisions of the Strategy guide the execution of key Russian documents: the Strategy for the Development of an Information-Oriented Society through 2030, the “Digital Economy of the Russian Federation” economic document, and roadmaps of the National Technology Initiative.<sup>9</sup> Compared to the U.S. and China, Russia's private-sector ecosystem is small and faces ongoing challenges with retaining top talent. This means Russia also lacks the components of a top AI ecosystem, which include large domestic cloud providers (as of the writing of this paper, companies like

Amazon, Microsoft, and Google have also paused their sales due to Russia's invasion of Ukraine); industrial research labs like OpenAI and Deepmind; and the ability to generate a significant research footprint, with Russia producing fewer than 50 peer-reviewed AI academic papers in 2019, compared to over 2,000 by the U.S.<sup>10</sup>



7 Markotkin and Chernenko, “Developing Artificial Intelligence in Russia: Objectives and Reality.”

8 Original CSET Translation of “Decree of the President of the Russian Federation on the Development of Artificial Intelligence in the Russian Federation” [Указ Президента Российской Федерации “О развитии искусственного интеллекта в Российской Федерации”], Office of the President of the Russian Federation, October 10, 2019, <https://cset.georgetown.edu/publication/decreed-of-the-president-of-the-russian-federation-on-the-development-of-artificial-intelligence-in-the-russian-federation/>

9 “Decree of the President of the Russian Federation on the Development of Artificial Intelligence in the Russian Federation,” translated by the Center for Security and Emerging Technologies, October 10, 2019, <https://cset.georgetown.edu/publication/decreed-of-the-president-of-the-russian-federation-on-the-development-of-artificial-intelligence-in-the-russian-federation/>

10 Jonathan Vanian, “Invading Ukraine has upended Russia's A.I. ambitions – and not even China may be able to help,” *Fortune*, March 25, 2022, <https://fortune.com/2022/03/25/russia-ai-sanctions-ukraine-china/>



Regardless, Russia has advanced in developing specific applications of AI, especially in the military and information spheres. Notable ones include building autonomous combat tanks (note: Russia has not denounced the use of lethal autonomous weapons systems, or LAWS) and creating AI algorithms aimed at populating the digital environment with deepfakes and disinformation.



On the international stage, Russia's AI strategy acknowledges the need for Russian international cooperation on matters involving AI-based certification and standardization for its AI products. Russia is also focused on using AI to disrupt adversaries' command-and-control (C2) systems, as well as communications capabilities. This is accompanied by a focus on developing non-military means to carry out information campaigns aimed at sowing political instability—part of Russia's hybrid warfare or gray-zone operations.<sup>11</sup> As Russia expands its capabilities using high technology and AI, in particular, China has proven to be the key partner to date.<sup>12</sup>

<sup>11</sup> Samuel Bendett et al., "Advanced military technology in Russia," Chatham House, September 23, 2021, <https://www.chathamhouse.org/2021/09/advanced-military-technology-russia/06-military-applications-artificial-intelligence>.

<sup>12</sup> CNA Report, Jeffrey Edmonds et. al, "Artificial Intelligence and Autonomy in Russia," Center for Naval Analyses, May 2021

# Military Applications of AI

Russia views military applications of AI as an amplifier of established methods of warfare, and a multiplier of force capabilities through an evolutionary approach.<sup>13</sup> The country has centered its AI investments around three core areas that will transform its war-fighting capabilities: electronic warfare, unmanned systems, and information operations/cyber warfare.



## Electronic Warfare

Russia's arsenal currently contains a wide range of highly mobile electronic warfare (EW) systems, and at least one of them has openly been acknowledged as possessing AI capabilities.<sup>14</sup> Russia's RB-109A Bylina EW system—a system the country publicly acknowledged—is capable of providing automated decision-support and independently identifying and selecting targets, including satellites, radars, and other communications systems. The system is also able to select its targets and determine which jamming stations to use. Russia's growing use of hybrid warfare aligns with its growing investments in EW capabilities. Since many U.S. and NATO military systems are connected to satellite communications, high-bandwidth internet, and GPS navigation, EW enables Russia to conduct adversarial attacks in the gray zone.<sup>15</sup> Integrating AI into its EW systems could allow Russia to make faster, more informed decisions while denying the same capability to its adversaries.



<sup>13</sup> Bendett et al., "Advanced military technology in Russia."

<sup>14</sup> Sergey Sukhankin, "Russia introduces EW Spetsnaz to Western Military District," The Jamestown Foundation: Eurasia Daily Monitor, vol. 14: 143 (November 2017), <https://jamestown.org/program/russia-introduces-ew-spetsnaz-western-military-district/>.

<sup>15</sup> Bendett et al., "Advanced military technology in Russia."



## Unmanned Systems

In 2018, the head of the Russia General Staff's office for unmanned aerial vehicle (UAV) development estimated the total number of operational UAVs at 1,900, compared to only 180 UAV systems in 2011.<sup>16</sup> Russia has focused on integrating robotic capabilities into existing military platforms, as opposed to developing entirely new systems and platforms, mostly in nuclear and non-nuclear strategic weapons and general-purpose forces.<sup>17</sup> While not every UAV uses AI, Russian company Kronstadt Group is working on incorporating AI into both civilian and military use applications, which furthers company CEO Armen Isaakyan's projection that the future will have "swarms of drones."<sup>18</sup> More recently, KUB-BLAs—the Russian "suicide drone" unveiled in 2019 that Russia claims can detect objects in real-time—are said to have appeared in Ukraine, which has raised concerns about the use of AI in battlefield environments.<sup>19</sup>



## Cyberspace Capabilities and Information Operations

Given information warfare is a central tenet of Russia's military strategy, AI-enabled information operations offer to become a "strategic war-winning asset" in peer-state conflicts.<sup>20</sup> In this domain, Russia can leverage AI to infiltrate social media networks, spread disinformation at an unprecedented speed, and target millions of citizens in target states simultaneously. One common example of this is creating fake bot accounts and spreading malign rhetoric aimed at creating political and societal destabilization.<sup>21</sup> Russia's sophisticated offensive cyber capabilities include using AI to strengthen its software vulnerability detection ratio, enable independent functioning of malicious codes, and multiply the effectiveness of spear phishing emails that deliver those codes.<sup>22</sup>

<sup>16</sup> David Oliver, "Russia's Rapid UAV Expansion," Armada International (December 2018/January 2019 Issue), <https://www.armadainternational.com/2019/03/russias-rapid-uav-expansion/>.

<sup>17</sup> Bendett et al., "Advanced military technology in Russia."

<sup>18</sup> "Russia is developing artificial intelligence for military and civilian drones," TASS, May 15, 2017, [https://tass.com/defense/945950?utm\\_source=google.com&utm\\_medium=organic&utm\\_campaign=google.com&utm\\_referrer=google.com](https://tass.com/defense/945950?utm_source=google.com&utm_medium=organic&utm_campaign=google.com&utm_referrer=google.com).

<sup>19</sup> Will Knight, "Russia's Killer Drone in Ukraine Raises Fears About AI in Warfare," WIRED, March 17, 2022, <https://www.wired.com/story/ai-drones-russia-ukraine/>.

<sup>20</sup> Rod Thornton and Marina and Miron, "Towards the Third Revolution in Military Affairs," The RUSI Journal, 165(3): pp. 12–21 (2020), <https://doi.org/10.1080/03071847.2020.1765514>.

<sup>21</sup> Bendett et al., "Advanced military technology in Russia."

<sup>22</sup> Ben Buchanan et al., "Automating Cyber Attacks: Hype and Reality," Center for Security and Emerging

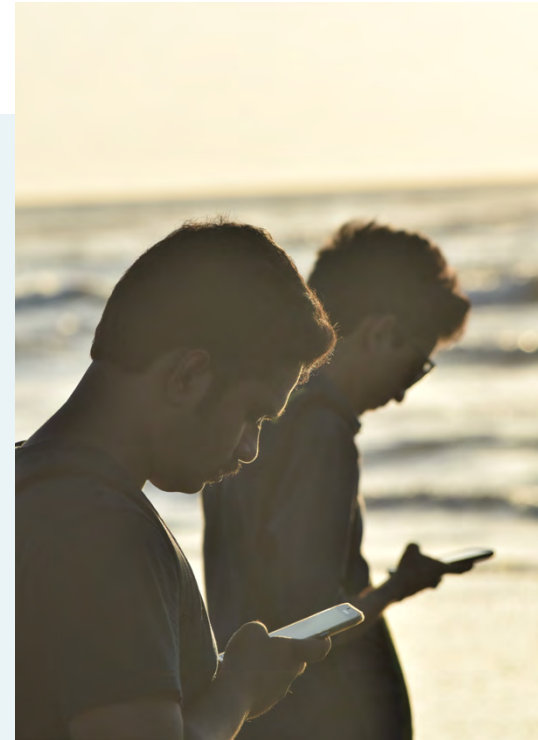
# Commercial Applications of AI

While Russia is prioritizing its AI investments for military developments, the country has not overlooked the commercial sector, with many top AI engineers working in business or academia.<sup>23</sup> In the retail and e-commerce sector, for example, companies are using AI to monitor and analyze key trade performance indicators in real-time, forecast demand and stock replenishment, and detect and prevent thefts in hypermarkets.<sup>24</sup> In the medical field, neural net imagery algorithms are being applied to lung images and aiding in COVID-19 diagnostics.<sup>25</sup>

Of particular concern is how technology entrepreneurs categorize AI-enabled facial recognition software as a public safety feature. They are currently integrating AI into dense security camera networks in major Russian cities, such as Moscow—an infringement on privacy rights that has alarmed the international community.<sup>26</sup> In fact, Russia announced the creation of a central database that would collect fingerprints, facial images, and other biometric data for both Russian citizens and foreigners, which it hopes to complete within the next few years.<sup>27</sup>

## AI Safety, Ethics, and Testing

The Russian government has acknowledged the potential dangers of AI and has called for international standards to limit the technology. In his speech to the United Nations in September 2020, President Putin called on the international community to restrict the use of AI for humanity's benefit, urging member states to seek AI regulations that support both military security and morality.<sup>28</sup> At the same time, Russia opposes a ban on lethal autonomous weapons systems (LAWS), claiming that this particular application of AI is in too early stages to regulate.<sup>29</sup> Russia's approach to LAWS is supported by CalypsoAI's research, which indicates a lack of effort to implement AI safety and testing standards and processes.



<sup>23</sup> Vanian, "Invading Ukraine has upended Russia's AI ambitions – and not even China may be able to help"

<sup>24</sup> "AI in Russia: How Russian companies implement AI," ICT Moscow, <https://ict.moscow/en/projects/ai/?integrationApplications=retail+and+e-commerce>.

<sup>25</sup> "Moscow will expand its experiment on the implementation of artificial intelligence in medicine," Lenta.ru, Nov. 24, 2020, <https://lenta.ru/news/2020/11/24/med/>.

<sup>26</sup> Markotkin and Chernenko, "Developing Artificial Intelligence in Russia: Objectives and Reality."

<sup>27</sup> Kristyna Foltynova, "We See You! How Russia Has Expanded Its Video-Surveillance System," Radio Free Europe/ Radio Liberty, January 19, 2021, <https://www.rferl.org/a/russia-video-surveillance/31052482.html>.

<sup>28</sup> Samuel Bendett, "Putin Urges AI Limits: But for Thee, Not Me?" Defense One, December 3, 2020, <https://www.defenseone.com/ideas/2020/12/putin-urges-ai-limits-thee-not-me/170458/>.

<sup>29</sup> Ibid.



## Initiatives and Key Statements

Russia adopted the “Experimental Regulation for Facilitating Development of AI Technologies in Moscow” initiative in 2020, meant to create favorable legal conditions for the development of AI-related tech and test AI-based applications, and expected to run through 2024.<sup>30</sup>

The country’s ambitions for AI can be gauged by assessing key statements from high-ranking members Russian officials:

*“Artificial intelligence is the future, not only for Russia, but for all humankind. Whoever becomes the leader in this sphere will become the ruler of the world.”<sup>31</sup>*

Russian President Vladimir Putin

*“We believe that it is necessary to activate the powers of the global community as quickly as possible to develop a comprehensive regulatory framework that would prevent the use of the specified [new] technologies for undermining national and international security.”<sup>32</sup>*

Russian Security Council Secretary Nikolai Patrushev

<sup>30</sup> “Policy initiatives for Russian Federation,” OECD.AI (2020), <https://oecd.ai/en/dashboards/policy-initiatives?conceptUris=http%3F%2Fkim.oecd.org%2FTaxonomy%2FGeographicalAreas%23RussianFederation>.

<sup>31</sup> Radina Gigova, “Who Vladimir Putin thinks will rule the world,” CNN, September 2, 2017, <https://www.cnn.com/2017/09/01/world/putin-artificial-intelligence-will-rule-world/index.html>.

<sup>32</sup> “Russia’s security chief calls for regulating use of new technologies in military sphere,” TASS, April 24, 2019, <https://tass.com/defense/1055346>.



## Conclusion

Despite institutional challenges and a constricted ecosystem, Russia continues to make notable progress in AI development. MI6 chief Richard Moore warned that adversaries are “pouring money and ambition into mastering artificial intelligence, quantum computing, and synthetic biology” and specifically highlighted the rapidity with which Russia is harnessing the power of sophisticated technologies. While the country’s efforts may be impacted by Western sanctions imposed in response to the war in Ukraine, Russia’s AI capabilities and investments should continue to be monitored.



## About CalypsoAI

Based in Silicon Valley, CalypsoAI is the leading provider of trusted AI solutions. CalypsoAI ensures reliable, robust, and trustworthy AI/ML technology development and deployment through model accreditation and Model Risk Management (MRM). This helps solve challenges that organizations face since AI is being developed without standard tooling, leading to unknown quality and risk models while creating barriers to AI adoption. CalypsoAI was founded by DARPA, NASA, and DoD veterans to help the national security community solve operational AI problems.

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<sup>33</sup> “UK spy chief warns China, Russia racing to master AI,” Aljazeera, November 30, 2021, <https://www.aljazeera.com/news/2021/11/30/uk-spy-chief-warns-china-russia-racing-to-master-ai>.