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Abstract

This report, the twenty-seventh in a series of biweekly updates, is part of an effort by CNA to provide timely, accurate, and relevant information and analysis of the field of civilian and military artificial intelligence (AI) in Russia and, in particular, how Russia is applying AI to its military capabilities. It relies on Russian-language open source material.

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Approved by: **December 2021**

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Highlights of Issue 27

- In AI Journey conference speech, Putin discusses Russia's priorities in AI development.
- Russia is pushing military AI and autonomy in the maritime domain.
- Russia advances in international supercomputer rankings because of new Yandex and Sber additions.
- Studies point to reasons for Russia's IT sector brain drain.
- Sber to participate in Council of Europe's partnership on new technologies.

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Governance and Legal Developments

1. Putin speaks at AI Journey conference

On November 12, Russian president Vladimir Putin spoke for the third time at the annual AI Journey conference, organized by Sber. He began by saying that AI "is a field that attracts talented, creative people that are ready to dream big and work toward their goals" and "is the cutting edge of science and engineering." He further noted, "It is very important to make sure that these breakthroughs opening up truly limitless opportunities do not harm but help people, help save our planet and ensure its sustainable development." Putin also made the following points before he entertained questions primarily from young participants in the conference:

- The economic environment is being transformed into one that will strive to "work toward the interests and needs of individual customers" and affect "not only the economy but also the social sphere and government administration."
- Russia needs to be among the leaders in this transformation because ''the winners in today's world are those who are making better use of the powerful technological potential in the interests of people and their prosperity. They are winning the global competition."
- Russian companies need to "accelerate the digital transformation across the board and as soon as possible move from isolated experiments and pilot initiatives to end-to-end projects with AI applications, primarily in areas that determine quality of life."
- The mission of the Russian "state, scientists, engineers, and innovative businesses" is to "make the technologies of the future accessible right now and see that they serve all the country's citizens and our national development goals."
- The government needs to "carefully analyze our development plans for industry, the social sphere, transport, communications and telecommunications" because these "plans must be aligned and closely coordinated with sectoral and regional strategies for the introduction of artificial intelligence and, of course, with the progress of our entire development agenda." It also needs to tailor education in AI technologies to specialists in the above-mentioned sectors.
- The pace of the government in efforts to "help businesses conduct technological upgrades and to offer tax incentives to companies and organizations" in this regard has been unacceptably slow.

- Russia needs to "remove as swiftly as possible all excessive barriers to designing and introducing advanced solutions including in AI, to form a regulatory and legal environment which corresponds to the level of the technological progress."
- Data access is important to the development of these technologies, but "it is necessary to have effective mechanisms for the anonymization and storage of data and maximally clear, understandable rules for providing this anonymous information, as well as firm guarantees for protecting the rights and interests of people, including their private life." It is also essential to provide access to experts, institutions, and businesses to "the state's anonymized data bases" because "in current conditions any attempt to establish a monopoly on data limits free competition and economic development."
- Security of personal citizen information needs to be considered. For example, with regard to biometric information "the state must take responsibility for storing it yet ensure free access to it for banks and other organizations, but in a fully encrypted form, which rules out any external interference and open access to one's personal data."
- Cooperation among countries is important because "the creation and application of AI technologies for the sake of society, humankind, for the preservation of our planet, for studying the world ocean and outer space – these are all truly civilizational challenges and absolutely sweeping."
- Russia's education in the AI sphere is aimed at "creating a system of interdisciplinary research incorporating both the natural sciences and the humanities, which is indispensable for developing strong artificial intelligence."

Source: "Artificial intelligence conference," President of Russia website, Nov. 12, 2021, http://en.kremlin.ru/events/president/news/67099.

2. Sber hosts AI Journey 2021 conference

On November 10–12, Sber hosted the annual AI Journey conference. More than 52,000 participants from 125 countries registered to attend the conference, which saw more than 250 speakers from Russia and abroad, and included a special conference for younger participants (AI Journey Junior). Among many announcements, the following statements were made at the conference:

- Sber president German Gref stated that in 2021 incorporation of AI technologies will net Sber 100–200 billion rubles in profit, more than expected, and this amount is projected to increase next year. The conference included numerous announcements

of awards and technologies from Sber, including a new supercomputer, Christofari Neo.

- Presidential aide Maksim Oreshkin announced that, as part of programs to digitize the economy and incorporate AI technologies, more than 3 million new jobs may be created in Russia by 2025.
- Russia's deputy prime minister Dmitry Chernyshenko stated that "AI technologies will increase the effectiveness of digital transformation by 6–7 times." He noted that effectiveness is understood as speed, quality, level of personalization, economic effectiveness, and objectiveness.
- Chernyshenko also stated that Russia is likely to meet Putin's goal of entering the list of top 10 countries in terms of volume of scientific research and development by 2030; he stated that, "if we maintain current growth rates, we will be seventh by 2025 and fourth by 2030."

The English-language website of the conference: https://ai-journey.ru/en.

Sources: AI journey website, https://ai-journey.ru/, accessed Nov. 29, 2021; "Sber may see AI earnings around 200 billion rubles" [«Сбер» сможет заработать за счет ИИ около 200 млрд рублей], IA Red Spring, Nov. 13, 2021, https://rossaprimavera.ru/news/cc041921; "By 2025 in Russia there will be more than 3 million AI-connected work positions" [В России до 2025 года будет создано более 3 млн рабочих мест, связанных с ИИ], TASS, Nov. 10, 2021, https://tass.ru/ekonomika/12879257; "Chernyshenko: AI technologies increase effectiveness of digital transformation by 6-7 times" [Чернышенко: технологии ИИ увеличивают эффективность цифровой трансформации в 6-7 раз], Nov. 11, 2021, https://tass.ru/ekonomika/12892167; "Chernyshenko: almost 50% of AI MedTech-services in Russia are aimed at COVID diagnostics" [Чернышенко: почти 50% MedTech-сервисов в РФ на основе ИИ направлены на диагностику ковида], TASS, Nov. 11, 2021, https://tass.ru/ekonomika/12892677; "Chernyshenko: according to forecasts, Russia will take 4th place in scientific research in 2030" [Чернышенко: по прогнозам, РФ займет четвертое место по научным исследованиям в 2030 году], Nov. 11, 2021, https://nauka.tass.ru/nauka/12893065.

3. Russian deputy foreign minister describes new threat posed by AI in terrorist hands

In an interview with *Rossiyskaya Gazeta*, Oleg Syromolotov, a deputy foreign minister and former head of counterintelligence for Russia's Federal Security Service, highlighted the potential that AI in the hands of terrorists could pose a threat to society. He argued for international cooperation to develop rules to cope with this threat. He also discussed the ways that digital technologies are already being used to ensure safety of peaceful citizens, such as the Foreign Assistant app, which uses automated data analysis to provide information to

Russian citizens abroad about occurring or potential emergency situations in their location. According to Syromolotov, this app was helpful in assisting Russian diplomats in evacuating Russian citizens at the start of the coronavirus epidemic in 2020.

Sources: Vladimir Snegirev, "What are the MFA's weapons in combating global threats" [Каким оружием в борьбе с вызовами глобального характера располагает МИД РФ], *Rossiyskaya Gazeta*, Nov. 18, 2021, https://rg.ru/2021/11/18/kakim-oruzhiem-v-borbe-s-vyzovami-globalnogo-haraktera-raspolagaet-mid-rf.html; "Moscow has called AI in terrorist hands a new threat" [Москва назвала искусственный интеллект в руках террористов новой угрозой], *Izvestiya*, Nov. 18, 2021, https://iz.ru/1251524/2021-11-18/moskva-nazvala-iskusstvennyi-intellekt-v-rukakh-terroristov-novoi-ugrozoi.

Military and Security Developments

4. Greater unmanned capacity in the Black Sea Fleet

The Russian Ministry of Defense (MOD) has announced that, by the end of 2021, the Russian Black Sea Fleet will be receiving the next Project 22160 patrol ship, the "Sergei Kotov," outfitted with various unmanned underwater vehicles (UUVs) and unmanned aerial vehicles (UAVs). The Project 22160 is a large patrol ship, ideally suited for areas such as the Black Sea, that reportedly has a suite of UUVs and UAVs to assist it in reconnaissance and targeting. The modular design of the ship's weapons support systems enables the Russian Navy to equip it for a varying number of missions. Despite being a patrol ship, it is equipped with the Kalibr family of missiles, including the Kalibr SS-N-30a, long-range precision land strike missile with an open-source range in excess of 1,600 miles. The Sergey Kotov is the fourth Project 22160 to enter service with the Black Sea Fleet. Carrying unmanned military systems on board naval vessels is a major trend across the Russian Navy, which aims to make each vessel a carrier of air, surface, and subsurface autonomous systems for intelligence, surveillance, and reconnaissance and combat.

Sources: Alexy Ramm and Bogdan Stepovoy, "Transformer and content: The Black Sea Fleet will be strengthened with a new patrol ship," (Трансформер и содержание: Черноморский флот усилят новым патрульным кораблем), *Izvestia,* Nov. 30, 2021, https://iz.ru/1251298/aleksei-ramm-bogdan-stepovoi/transformer-i-soderzhanie-chernomorskii-flot-usiliat-novym-patrulnym-korablem.

5. New unmanned surface ship

In late September, Russia's predominant shipbuilding company, United Ship Building, launched the "Pioneer-M" surface ship, which is reported to be Russia's venture into unmanned surface ships. The ship's design is the result of the work of seven universities and was supported by the Ministry of Education, United Ship Building, and the Agency for Strategic Initiatives. Although the current ship does utilize a crew, the unmanned version is expected to be available in the 2022–2023 timeframe. The initial project for the design and production of the ship was for research into the use of unmanned systems in and around ports and busy maritime traffic areas, but some Russian military analysts have compared it to Russia beginning a project not unlike the US Navy's Ghost Fleet Overlord program, which seeks to field autonomous surface vessels to expand the Navy's operational reach.

Sources: Sevastopol State University, “Project 14.578.21.0259,” https://www.sevsu.ru/nauka/fcp/14-578-21-0259; Tass, “Research vessel "Pioneer-M" was launched in St. Petersburg (Научно-исследовательское судно "Пионер-М" спустили на воду в Петербурге), Sept. 24, 2021, https://tass.ru/obschestvo/12499301; Alexander Ivanin, “Upcoming Robot Ship Battles” (Грядущие битвы кораблей-роботов), Nezavisimoye, Nov. 11, 2021, https://nvo.ng.ru/armament/2021-11-11/5_1165_robots.html; Brett Tingley, “The Pentagon is adding two more large unmanned surface vessels to its Ghost Fleet program,” July 14, 2021, The Drive, https://www.thedrive.com/the-war-zone/41543/the-pentagon-is-adding-two-more-large-unmanned-surface-vessels-to-its-ghost-fleet-program.

6. “Electric Dome” counter-drone system

The Military Education and Scientific Center of the Russian Ground Forces Combined-Arms Academy has patented a new system to protect critical infrastructure from swarmed UAVs. The news release and patent describe the system as an “electric dome.” The system will have the ability to “operate in three modes - security, security repulsive, and security-striking.” These modes are consistent with broader concepts of counter-drone systems wherein the kill-chain is to detect (through radio frequency analyzers, radar, and optical sensors) and then intercept or destroy the drone (by jamming spoofing, lasers, and projectiles), depending on the desired outcome. Details are lacking on the proposed design of this specific “electric done,” but it is likely that it is a combination of a number of counter-drone technologies. It will be interesting to watch for any insight into the command and control of the system and whether it allows semi-autonomous deployment of relevant countermeasures. The development of counter-unmanned aircraft systems is a significant priority for the MOD and was influenced in no small part by Russia’s involvement in Syria and the proliferation of commercial off-the-shelf UAV technologies across Russia and the world.

Sources: “Russian military invented an "electric dome" to protect objects from a swarm of drones” [Российские военные изобрели "электрический купол" для защиты объектов от роя беспилотников], Tass, Nov. 11, 2021, https://tass.ru/armiya-i-opk/12891175; Arthur Holland Michel, “Counter-Drone Systems,” 2ed, Center for the Study of the Drone, Bard College, Dec. 2019, https://dronecenter.bard.edu/files/2019/12/CSD-CUAS-2nd-Edition-Web.pdf.

7. Putin – cognitive breakthrough technologies and defense

During a meeting of the military-industrial commission, President Putin stated that the new armaments program should emphasize cognitive breakthrough technologies, in addition to other military technologies, such as hypersonic weapons. Putin asserted that one of the trends

in military technology is the introduction of advanced information and bio-cognitive technologies. He also stated that the Russian military needed to "raise the functionality and combat sustainability of military products…through the use of artificial intelligence." This statement is consistent with Putin's frequent remarks on the need for Russia to be competitive in AI in all spheres particularly in its military capabilities. For more on this subject, see CNA's "AI and Autonomy in Russia" 2021 report.

Sources: "Putin urges use of cognitive, hypersonic technologies in new Russian weapons," Tass, Nov. 10, 2021, https://tass.com/defense/1359749.

Corporate and Market Developments

8. Russia gains position in global supercomputer rankings

With its 58th biannual update, the supercomputer rating "Top500" raised the newest Russian supercomputer to the position as 19th in the world by power, bringing the country back into the top-20 bracket of supercomputer hosting states for the first time since 2011. The rating change was attributable to Yandex' new Chervonenkis supercomputer, brought online in November. Sberbank's Christofari supercomputer was previously the most powerful Russian computer on the list. In terms of total number of supercomputers in the listing, Russia is in 10th place. Russia has a total of seven supercomputers on the Top500 list, including three owned by Yandex, two by Sberbank, one by MTS, and another at Moscow State University. Notably, two of Yandex's supercomputers, as well as Sberbank's Christofari Neo supercomputer, began operating in fall of this year.

Yandex' three supercomputers (Chervonenkis, Galushkin, and Lyapunov, all named for Soviet-era scientists) have all come online recently, in 2020 or 2021. CNews reports that Yandex is using the supercomputers mostly to develop its own services internally, with extreme processing power particularly important for translation and AI assistant programs. Russia lags considerably behind other major players in the computing field, such as China and the United States, who have 173 and 143 supercomputers on the list, respectively. The most powerful Russian supercomputers also continue to rely on foreign parts, including hardware such as GPUs, server processors, and graphics accelerators from NVIDIA, AMD, and their affiliates.

Sources: "Russia suddenly burst into the world's top most powerful supercomputers" ["Россия внезапно ворвалась в мировой топ самых мощных суперкомпьютеров"], CNews, Nov.16, 2021, https://www.cnews.ru/news/top/2021-11-16_rossijskie_superkompyutery; "Sberbank presented a new version of the Christofari supercomputer" ["Сбер представил новую версию суперкомпьютера Christofari"], TASS, Nov. 11, 2021, https://tass.ru/ekonomika/12892649; "Top500 November 2021 List," Top500, https://www.top500.org/lists/top500/2021/11/.

9. MTS and Bashkirenergo use AI to search for electricity theft

MTS announced an agreement with Bashkirenergo—the primary power utility in Bashkortostan—for cooperation on AI projects in the region's electrical grid. The partners

intend to launch a pilot of an AI-based platform to identify major commercial losses in power grids. The platform would rely on data from automated electricity metering systems to detect characteristic features of power theft and isolate unusual patterns. The program is expected to connect more than 200,000 existing energy meters to the software initially. Earlier tests carried out in the city of Ufa managed to identify instances when meters were undercounting metered electricity use by up to 10 times. MTS estimates that illegal connections—such as workshops and companies pretending to be metered at the level of personal domiciles—are "estimated at more than 250 billion rubles...and commercial losses reach up to 30%," according to MTS vice president Armen Avetisyan.

Source: "MTS and Bashkirenergo will search for theft in power grids using Big Data and artificial intelligence," ["МТС и «Башкирэнерго» займутся поиском хищений в электросетях с помощью Big Data и искусственного интеллекта"], CNews, Nov. 16, 2021, https://www.cnews.ru/news/line/2021-11-16_mts_i_bashkirenergo_zajmutsya.

10. New effort to use AI to diagnose COVID-19 patients in St. Petersburg

The Aleksandrovskaya Hospital in Saint-Petersburg will be the first state hospital to use automated CT examinations using AI protocols to diagnose COVID-19 in patients. The project is being implemented with the developer Botkin.ai, a local AI programming company. TASS reports that, "the project will become the basis for a fundamentally new approach to quality control of medical care." It is expected that this approach will make the hospital a regional flagship for medical AI uses, along the lines of a similar project being implemented at a hospital in Nizhny Novgorod.

Source: "Artificial intelligence will be used in St. Petersburg to check CT scan of covid patients" ["В Петербурге будут использовать искусственный интеллект для проверки КТ ковид-пациентов"], TASS, Nov. 19, 2021, https://tass.ru/obschestvo/12976843.

11. Russian Post conducts drone flight test for cargo delivery

The Russian Post recently successfully tested parcel delivery using UAV in the Yamalo-Nenets Autonomous Okrug (YNAO) in the Russian far north. The test flights went through the regional capital of Salekhard and used a helicopter-type drone, an Aeromax SH-350, covering more than 50 kilometers. The Russian Post is planning to launch several new test routes in other regions, including Chukotka, Kamchatka, and Khanty-Mansi, alongside 10 in Yamalo-Nenets. The deputy director general for logistics for the Russian Post, Sergey Sergushev, noted that the

organization is particularly interested in UAV deliveries "primarily for residents of settlements in remote and hard-to-reach areas, so that they quickly receive any postal items." The ongoing tests are part of an agreement between the YNAO government, Russian Post, and Aeromax signed at the International Aviation and Space Salon MAKS-2021. Russian Post hopes that UAV deliveries will double the average speed of regional logistics routes, increase the volume of cargo traffic, and reduce costs by up to 50 percent.

Sources: "Russian post demonstrates cargo delivery using UAVs" ["«Почта России» продемонстрировала доставку груза с помощью БПЛА"], D-Russia, Nov. 18, 2021, https://d-russia.ru/pochta-rossii-prodemonstrirovala-dostavku-gruza-s-pomoshhju-bpla.html; "Russian Post and Aeromax conducted the first drone flight along the route to Yamalo-Nenets Autonomous Okrug" ["«Почта России» и «Аэромакс» провели первый полет беспилотника по маршруту в ЯНАО"], CNews, Nov. 18, 2021, https://www.cnews.ru/news/line/2021-11-18_pochta_rossii_i_aeromaks.

Education and Training Developments

12. New studies suggest reasons for Russia's IT brain drain

A poll conducted by the Russian educational platform GeekBrains suggests that more than half (53 percent) of Russian IT students would like to leave Russia. The top motivations for wanting to leave were: For a higher standard of living among students (35 percent); to join relatives, friends, and acquaintances living in another country (19 percent); for more opportunities for career development (17 percent); and for a higher salary (13 percent). Although the study found that the majority of respondents (34 percent) found it difficult to identify the country to which they would like to relocate, 25 percent stated they would like to emigrate to the US. This study may help explain Russia's IT brain drain problem during a period where it faces a shortage of around 1 million specialists, according to the Ministry of Digital Development.

Another study, recently published by the Institute for Statistical Research and Economics of Knowledge of the Higher School of Economics, analyzes the makeup and scale of science R&D personnel in Russia. It concludes that in the field of technical sciences, specifically, the number of researchers in 2020 (208,994 individuals) decreased from that in 2019 (213,924 individuals) and 2011 (226,492 individuals). These figures match broader trends of slight decline in the overall number of R&D personnel in Russia across the study's time period. The results of the Russian government's investment into education and training are yet to be reflected in these numbers.

Sources: "More than half of students receiving IT education want to leave Russia," [Больше половины студентов получающих ИТ-образование хотят уехать из России], CNews, Nov. 19, 2021, https://www.cnews.ru/news/line/2021-11-19_bolshe_poloviny_studentov; "The scale of employment in Russian science" [Масштабы занятости в российской науке], Higher School of Economics, Oct. 13, 2021, https://issek.hse.ru/news/516705296.html.

13. Numerous AI-centered competitions take place in November

Several recent AI-related competitions and events sponsored by the Russian government and the private sector took place in November, according to reports. The most notable are summarized below:

- The finals of the "UMNIK—Artificial Intelligence" competition were held at Perm's Morion Digital technopark on November 15, 2021. The competition, supported by telecommunications company ER-Telecom, was open to individuals between the ages of 18 and 30. More than 204 projects were selected for the semifinals, and the 11 winning projects each received 500,000 ruble grants from the Innovation Promotion Fund, a state-run non-profit organization.
- The All-Russian Olympiad for Artificial Intelligence was held from October 5 to November 18, 2021, and was open to students in grades 8–11. According to the event website, more than 10,000 schoolchildren applied for the event, and 1,720 students participated in the main phase of the competition. The Olympiad was organized by the Russian Ministry of Education.
- The 9th and 10th iterations of the 116 hackathon series (planned from 2021–2024) were held in Chelyabinsk (November 19–21) and Samara (November 26-28), respectively. In Chelyabinsk, tasks included designing AI to improve air traffic control, and in Samara, participants developed AI-based technologies to protect endangered animal species.
- The AI finals of the RuCode Festival 4.0 concluded on November 20, 2021. More than 6,000 Russians took part in the qualifying rounds. In addition to the competition, the festival included intensive training and online courses on machine learning, computer vision, natural language processing, and data analysis mathematics. The festival was supported by the Ministry of Science and Higher Education of the Russian Federation and by industry partners MegaFon, Yandex, Sberbank and Gazprombank.
- In addition, a joint Russian team composed of scientists from Rosselkhozbank and MIPT has advanced to the finals of the international "Autonomous Greenhouse Challenge" agricultural competition after taking second place in the semi-final stage. The finals will take place in Holland from February to June 2022.

Sources: "All-Russian Olympiad in Artificial Intelligence for grades 8-11" [Всероссийская олимпиада по искусственному интеллекту для 8-11 классов], Olimp.Edsoo.Ru, accessed Nov. 29, 2021, https://olimp.edsoo.ru/; Artificial Intelligence [Искусственный Интеллект], RuCode Festival, accessed Nov. 29, 2021, https://rucode.net/iskusstvennyj-intellekt/#chemp_ru; "More than 200 projects competed in the competition "Clever - Artificial Intelligence" in the Perm Technopark" [Более 200 проектов соревновались на конкурсе «Умник – Искусственный интеллект» в пермском технопарке], DRussia, Nov. 16, 2021, https://d-russia.ru/bolee-200-proektov-sorevnovalis-na-konkurse-umnik-iskusstvennyj-intellekt-v-permskom-tehnoparke.html; "Hackathons and lectures on artificial intelligence" [Хакатоны и лекции по искусственному интеллекту], Hackathon 2021, https://hacks-ai.ru; "Russia is not only rich in Dota - RSHB team in the Autonomous Greenhouse Challenge finals" [Не Dota единой богата Россия – команда РСХБ в финале Autonomous Greenhouse Challenge], 56Orb.Ru, Nov. 19, 2021, https://56orb.ru/news/economy/19-11-2021/ne-dota-edinoy-bogata-rossiya-komanda-rshb-v-finale-autonomous-greenhouse-challenge.

14. New AI programs and institutes started up in Russia's regions

According to a November 16 SEO News article, Yandex, MIPT, Adyghe State University (ASU), and Sirius will open a new program titled "Artificial Intelligence in Mathematics and IT Education" in 2022. Instruction will take place at MIPT and ASU. MIPT Rector Dmitry Livanov was quoted saying, "[W]e are seeing a catastrophic shortage of specialists capable of designing truly high-quality educational products. The program will fill this gap." According to the article, this new educational program will be the first step in the work of the "University Mathematical and Digital Ecosystem of the South of Russia" consortium, founded by the four partners.

According to a November 9 Tass article, a new Institute of Artificial Intelligence and IT Technologies was created at the Kabardino-Balkarian State University (KBSU) in the North Caucasus region of Russia. The program, which will train at the bachelor's, master's, and postgraduate levels, is expected to graduate 107 specialists in the field of IT and AI in 2022, with an annual growth of 7–10 percent. In addition to teaching students, the new division will develop AI projects in the fields of medicine, dentistry, data science, and the agro-industrial complex. The new program hopes to supply the region with qualified personnel.

Sources: Alina Nazarova, "Yandex will open an educational program on artificial intelligence in mathematics and IT education," [Яндекс откроет образовательную программу по искусственному интеллекту в математическом и IT-образовании], SEO News, Nov.16, 2021, https://www.seonews.ru/events/yandeks-otkroet-obrazovatelnuyu-programmu-po-iskusstvennomu-intellektu-v-matematicheskom-i-it-obrazovanii/; "Institute of Artificial Intelligence and IT Technologies was created at the State University of KBR" [Институт искусственного интеллекта и ИТ-технологий создали в госуниверситете КБР], Tass, Nov. 9, 2021, https://tass.ru/obschestvo/12874667.

15. ISP RAS announces six AI projects

The Ivannikov Institute for System Programming of the Russian Academy of Sciences (ISP RAS) has reportedly identified six projects that it will begin for the Analytical Center of the Russian Government:

- "Application of trusted and explainable AI (XAI) methods to the psychological diagnostic technologies of a person according to social networks"
- "Methods for detecting and countering adversarial attacks on machine learning models"
- "Preparation and classification of X-ray medical datasets using AI/developing criteria and methods for trusting systems with AI in medicine"

- "Development of approaches to assessing the ethical aspects of the use of AI systems in medical institutions"
- "Application of trusted and explainable AI methods to the analysis of omics data"
- "Research and development of question-answer systems with the possibility of explaining the answer given"

As mentioned in previous issues of *AI in Russia*, the ISP RAS was one of the six institutions recently designated a Russian AI center by the Analytical Center of the Russian Government. Each of the six institutions will receive around 1 billion rubles in funding over the next three years.

Sources: "The Russian authorities will predict the "brain drain" and the behavior of top officials on social networks" [Власти России будут прогнозировать «утечку мозгов» и поведение топовых чиновников по соцсетям], CNews, Nov. 29, 2021, https://www.cnews.ru/news/top/2021-11-26_vlasti_reshili_uznatkak.

International Collaboration

16. Sber to cooperate with Council of Europe on new technology

At the AI Journey Conference, Sber announced that it was joining the Council of Europe's partnership with technology companies. "The framework of the partnership between the Council of Europe and the world's leading technology firms was approved in 2017 and is essentially a platform where the Council of Europe collaborates with and consults businesses on new tech projects. The goal of the partnership is to facilitate the exchange of experience and opinions with regards to the Council of Europe's human rights agenda in the digital domain. The Council of Europe already has similar partnership agreements with 14 leading global technology companies, including with Google, IBM, Facebook (Meta), Microsoft, Apple, and more." Prior to Sber's joining, Kaspersky Lab was the sole Russian program participant.

Sber was invited to join the Council of Europe partnership program because it is seen as a key player in the development of the AI field in Russia, and it is actively involved in international discussions on AI regulation. "Sberbank representatives participate in the Council of Europe's committees as experts (one of them chaired the Consultations and Outreach Group holding inter-governmental consultations under the Council of Europe's Ad hoc Committee on Artificial Intelligence) and are members of Russian delegations to other international organizations addressing AI technology regulation issues" in organizations such as UNESCO and the OECD.

Sources: "Sber and Council of Europe agree to cooperate in new technology" MarketScreener, Nov. 10, 2021, https://www.marketscreener.com/quote/stock/PJSC-SBERBANK-6494829/news/Sber-and-Council-of-Europe-agree-to-cooperate-in-new-technology-36973052/.

17. Reports compare UNESCO's and Russian AI ethics codes

The UNESCO general conference recently adopted its recommendation on the ethics of AI. The goal of the document is to reduce the risks that AI would have a negative effect on equality and on human rights. The document was developed and adopted by a group of 55 countries, including Russia and China. It lists 14 key values and principles, as follows:

1. Respect, protection, and promotion of human rights and fundamental freedoms and human dignity

2. Well-being of the environment and ecosystems
3. Ensuring diversity and inclusion
4. Living in peaceful, just, and interconnected societies
5. Proportionality and no harm
6. Safety and security
7. Fairness and non-discrimination
8. Sustainability
9. Right to privacy and data protection
10. Subordination and subordination to man
11. Transparency and explainability
12. Responsibility and accountability
13. Awareness and literacy
14. Multilateral and adaptive governance and synergies

Russian analysts compare the document to the values adopted domestically in Russia in the National Strategy for the Development of Artificial Intelligence through 2030, which was adopted in 2019. They find that the Russian policy is based on the same ethical principles and does not contradict the UNESCO document. They also compare the UNESCO document to the Russian AI code of ethics, which was adopted by Russian non-governmental institutions (NGO) in October 2021. As in the case of the UNESCO Recommendation, the purpose of the code is to protect the rights of citizens from being violated by AI systems used by companies and the state. According to the analysis, the Russian ethics code complies with the UNESCO Recommendation in spirit, and sometimes literally, for example, in terms of raising awareness about the ethics of using AI, and in ensuring that AI systems do not harm humans and are instead used for the benefit of human communities.

The Russian Code, however, is primarily a practically applicable document designed for voluntary adoption by companies and organizations. It primarily serves the purpose of being an instruction for ethical use of AI. Unlike the UNESCO Recommendation, it contains not only general principles but also specific provisions. For example, it declares that AI systems should not be used outside of their "own" subject area. However, the analysis finds that these differences are minor. Overall, Russian government and NGO documents on the ethics of using AI systems coincide with the UNESCO Recommendation.

Sources: Andrey Filatov, "UNESCO adopted recommendation on AI ethics" [ЮНЕСКО приняла рекомендацию об этических аспектах искусственного интеллекта], D-Russia, Nov. 17, 2021, https://d-russia.ru/junesko-prinjala-rekomendaciju-ob-jeticheskih-aspektah-iskusstvennogo-intellekta.html; UNESCO site: https://www.unesco.org/en/general-conference/41/commissions/shs, accessed Nov. 29, 2021.

18. International forum on AI and digital economy held in Moscow

On November 25–26, the Plekhanov Russian University of Economics in Moscow hosted the fourth international scientific forum on AI and the digital economy, titled "A step into the future." The forum's participants included Russian and foreign experts, as well as practitioners and government officials. The forum's main topic was a look into the future of technological leadership, with the goal of creating a future where there is a balance between digital technologies, AI, and the green economy on one hand, and societal security and comfort of living on the other. The forum discussed ways in which governments, scientists, educators, and business can work together to develop coordinating mechanisms that would allow Russia to become a trendsetter in low fossil fuel development. The forum was co-sponsored by the Russian Ministry of Science and Higher Education and the Ministry of Digital Development and Communications, together with the Business Russia organization, RBC media holding, *Kommersant* newspaper, and leading IT companies.

Source: Ministry of Education and Science website, "IV interntional forum "Step into the Future: AI and digital eoconomy" [IV Международный научный форум «Шаг в будущее: искусственный интеллект и цифровая экономика»], https://minobrnauki.gov.ru/press-center/news/?ELEMENT_ID=42315, accessed Nov. 30, 2021.

Spotlight: KUB-BLA Kamikaze drone

Source: Zala-Aero, KUB-BLA, accessed Nov. 14, 2021, https://zala-aero.com/production/bvs/kyb-uav/.

The Zala Aero company, which is part of Russia's large Kalashnikov group of companies, has modified the KUB-UAV for use in the maritime domain. The KUB-UAV is a loitering ammunition, otherwise known as a kamikaze, drone that can strike from a manual command or by image recognition, according to the Zala Aero website. Given the speed and flight time of the drone provided on the site, its range is approximately 40 –65 kms, depending on speed. A speculative assessment suggests that the small size of the drone and constraints on the size of any integrated munitions, in addition to its limited range, indicate it may be used in coastal regions in its maritime configuration, perhaps in support of base protection or amphibious operations. The drone was recently featured at the Dubai Airshow 2021, where Rostec announced that it would be making the drone available for export, although probably not before the Russian military acquires it. The development and fielding of the KUB was greatly influenced by Russian military actions in Syria, and by the 2020 Nagorno-Karabakh conflict where Azerbaijan successfully used such drones against the Armenian military.

Source: "Zala Aero tested the KUB-UAV marine strike drone" [Zala Aero испытала морской ударный беспилотник КУБ-БЛА], Tass, Nov. 8, 2021, https://tass.ru/armiya-i-opk/12867427; Zala-Aero, KUB-BLA, https://zala-aero.com/production/bvs/kyb-uav/. Russia began promoting the KUB-UAV kamikaze strike drone on the world market" [Россия начала продвижение ударного беспилотника-камикадзе КУБ-БЛА на мировой рынок], Tass, Nov. 14, 2021, https://tass.ru/armiya-i-opk/12917977.

This report was written by CNA's Strategy, Policy, Plans, and Programs Division (SP3).

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