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Вьетнам и искусственный интеллект

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Аннотация. В статье рассматривается тема развития и внедрения генеративного искусственного интеллекта (ИИ) во Вьетнаме – одной из быстро развивающихся стран Восточной Азии. Правительство Вьетнама на базе своих экономических успехов с каждым годом уделяет всё большее внимание развитию и финансированию отрасли ИИ. В национальной стратегии правительства страны поставлена задача превратить Вьетнам в один из ведущих центров в области искусственного интеллекта в регионе и в мире. Работы, связанные с созданием и применением ИИ, постепенно становятся во Вьетнаме общенациональным делом. В качестве примера рассмотрено такое крупное мероприятие по продвижению технологий ИИ, как Вьетнамский день искусственного интеллекта на тему «Искусственный интеллект: Сила жизни», который прошёл в сентябре 2023 г. в главном экономическом центре страны – г. Хошимине. Также обозначена деятельность Совместного российско-вьетнамского Тропического научно-исследовательского и технологического центра в контексте его вклада в решение проблемы ИИ.

Ключевые слова: Вьетнам, наука, искусственный интеллект, сотрудничество.

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Vietnam and artificial intelligence

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Abstract. The article examines the topic of development and implementation of generative artificial intelligence (AI) in Vietnam, one of the rapidly developing countries in East Asia. The Vietnamese government, stimulated by its economic success, is paying more and more attention to the development and financing of the AI industry every year. The government's national strategy aims to transform Vietnam into one of the leaders in the field of artificial intelligence in the region and even in the whole world. The work on creation and application of AI is gradually becoming a national concern in Vietnam. As an example, the author considers Vietnam Artificial Intelligence Day on the topic “Artificial Intelligence: The Power of Life” – a major event to promote AI technologies, which was held in September 2023 in Ho Chi Minh City, the main economic center of the country. The activities of the Joint Russian-Vietnamese Tropical Research and Technology Center are also outlined in the context of its contribution to solving the AI problem.

Keywords: Vietnam, science, artificial intelligence, partnership.

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Introduction

It can be stated that today artificial intelligence (AI) is a candidate for becoming a key technology of the 21st century [Artificial intelligence...]. The success of the widespread use of the ChatGPT chatbot (GPT – Generative Pre-trained Transformer) with artificial intelligence, developed by OpenAI, which is capable of working interactively and processing requests in native languages, has become a powerful incentive for the development of various areas and applications of generative artificial intelligence in many countries around the world, including countries in East and Southeast Asia since the release date (November 30, 2022)¹.

Simply, AI is a technique that allows a computer, computer-controlled robot, or software to think “intelligently”, like a human. AI is achieved by studying patterns of the human brain and analyzing the cognitive process. As a result of this research, intelligent software and systems are developed. For example, AI is considered to be a program that filters spam in email, a program that displays advertising based on your location, interests and search queries, as well as a voice assistant in your smartphone/speaker. AI is believed to improve the speed of decision-making, reduce human errors, and generally increase economic efficiency [Russell, Norvig 2021].

In the book “Guest from the Future” by Soviet science fiction writer Kir Bulychev, the entire plot is based on the ‘myelophone’, a device that is able to read thoughts. Many experts believe that a device that can in some cases read thoughts can be created with the use of artificial intelligence. Even today, through CCTV cameras, AI can identify, for example, aggressive people in a crowd by facial expressions. Perhaps, after some time, it will learn to read their intentions by gestures, gait, etc. However, most proficient experts believe that mind reading cannot be used everywhere. This is because the ability of people to read each other’s thoughts can have a very detrimental effect. Nevertheless, if doctors are able to use AI to identify people who are overly aggressive, mentally unstable, or suicidal, there will be nothing negative in determining their thoughts [Esenin].

AI in the Socialist Republic of Vietnam

Vietnam, as one of the rapidly developing Asian countries, is also paying serious attention to the development of AI. Although quite recently Vietnam, according to the UN criteria, was among the 25 poorest countries in the world. In recent years, with the beginning of the “Doi Moi” renewal policy, it has achieved impressive economic success [Kobelev]. Over the past decade, Vietnam's GDP per capita, measured at purchasing power parity, has tripled.

¹ ChatGPT fever reaches Vietnam, from Vingroup to AI startups // Nikkei Asia. February 16, 2023. URL: <https://asia.nikkei.com/Business/Technology/ChatGPT-fever-reaches-Vietnam-from-Vingroup-to-AI-startups> (accessed: September 25, 2023).

Based on economic success, the Vietnamese government is paying more and more attention to the development and financing of artificial intelligence every year. Since 2014, the government has listed AI as one of the important technologies of the 4th Industrial Revolution that should be prioritized for development. This led to setting the task to intensify research and application of AI technologies in various areas – healthcare, education, business, trade, finance, agriculture, etc. Deputy Minister of Science and Technology of Vietnam Bui The Dui announced: “In recent years in Vietnam, business leaders, research institutions and universities are increasing their interest in artificial intelligence. Even the AI community has been created in the country. ... In order to develop AI in Vietnam, serious efforts of every person, every scientist and every enterprise manager are necessary, and it will contribute to the socio-economic development of the country”, emphasized Dui².

On January 26, 2021, the Vietnamese government approved the National Strategy for Research, Development and Application of Artificial Intelligence 2030, which aims to gradually transform Vietnam into one of the leading centers in the field of artificial intelligence in the region and in the whole world³. In the Directive of the Prime Minister of Vietnam on enhancing access to the 4th industrial revolution, AI technologies are called breakthrough technologies. The resolution adopted at a government meeting in March 2018 set the task of developing a national strategy for the 4th industrial revolution, the priority of which was the development of artificial intelligence. This strategy is expected to boost AI development in Vietnam, contribute to the country's socio-economic development, and help Vietnam rank among the top four ASEAN countries and the top 50 countries in the world in AI research and development by 2030⁴.

The Strategy states that the AI industry should become an important aspect of modern technology and contribute to creating an innovative society, effective government, protecting national security, maintaining public order and security, and promoting development and sustainable economic growth. AI will be widely used by the government, and online government services will help reduce processing and waiting time and costs for people. Many large provinces and cities – Ho Chi Minh City, Hanoi, Danang, Thua Thien-Hue – already widely use AI in healthcare, education, public administrative services, etc.

The International Development Research Center (Canada) and Oxford Insights (UK) have jointly produced the 2021 annual report, which ranked Vietnam sixth among ASEAN countries and 62nd in the world for the readiness for AI implementation. Surprisingly, Vietnam's AI readiness score has already reached 51.82 points out of 100, surpassing the global average of 47.72 and pushing the country 14 positions higher than in 2020⁵.

A good technological base for the successful development of AI in Vietnam has already been created. According to the report of the Ministry of Information and Communications of Vietnam for 2019, the country had more than 30,000 information and communication technology (ICT)

² V'yetnam aktiviziruyet razvitiye iskusstvennogo intellekta v oblasti startap-proyektov // Vovworld.vn. November 23, 2019. (In Russian). URL: <https://vovworld.vn/ru-RU/беседа/вьетнам-активизирует-развитие-искусственного-интеллекта-в-области-стартап-проектов-804442.vov> (accessed: September 25, 2023).

³ Prevrashcheniye V'yetnama v tsentr innovatsiy i razvitiya iskusstvennogo intellekta // Vietnamplus.vn. August 07, 2021. (In Russian). URL: <https://link.gov.vn/eym7kMoa> (accessed: September 25, 2023).

⁴ Razvitiye industrii tekhnologiy II vo V'yetname // Vietnamplus.vn. February 12, 2023. (In Russian). URL: <https://link.gov.vn/tiMBTzcg> (accessed: September 25, 2023).

⁵ V'yetnam zanimayet vse boleye vysokuyu pozitsiyu v sfere iskusstvennogo intellekta // Nhandan.vn. February 24, 2023. (In Russian). URL: <https://ru.nhandan.vn/v-etnam-zanimaet-vse-bolee-visokuju-pozitsiju-v-sfere-iskusstvennogo-intellekta-post38537.html> (accessed: September 25, 2023).

enterprises of various modifications, about 955,000 IT specialists and more than 80,000 graduates of universities and colleges with specialties in the field of ICT. Due to the country's open economic environment and huge labor pool, AI apps across various fields have seen great development. Vietnam is quickly becoming the new IT hub in Southeast Asia and one of the world's favorite destinations for IT outsourcing services.

Creation and application of AI is gradually becoming a national concern in Vietnam. In 2019, Vietnam hosted an artificial intelligence celebration, which was devoted to “Activating AI”. This event provided scientists, business executives, and startups with the opportunity to meet in purpose of interaction in the field of AI. Various events took place within the framework of the holiday – discussions, workshops, exhibitions, techno shows, “hackathon” competitions, etc. The principle of the Institute of Information Technology at Hanoi Polytechnic, Ta Hai Thung, said: “The holding of this celebration by the Ministry of Science and Technology, the Ministry of Planning and Investment of Vietnam is essential because this event has provided a good opportunity to create an artificial intelligence community that would be able to play an important role in the development of AI”⁶.

On September 21–22, 2023, the Vietnam Artificial Intelligence Day (AI4VN) was held in the economic center of the country, Ho Chi Minh City. Its topic was “Artificial Intelligence: The Power of Life”. The leading scientific and technical event within the framework of Artificial Intelligence Day was the national exhibition of the application of AI in everyday life, organized by the Ministry of Science and Technology and the online newspaper VnExpress. During the exhibition, more than 30 stands demonstrated achievements in the practical application of artificial intelligence in economics, science, agriculture, and education. The exhibition area included materials on many different topics: AI for the family; AI for business, healthcare, banks, schools, etc.



The 2023 Vietnam Artificial Intelligence Day (AI4VN). A poster of the event.

Source: URL: <https://link.gov.vn/KIUzyEuO> (accessed: September 25, 2023).

Many of the research results and applied AI products presented during Vietnam Artificial Intelligence Day are expected to be used in real life. A variety of technology experts who provided advice, career guidance and employment placements to visitors, took part in the exhibition. In

⁶ V'yetnam aktiviziruyet razvitiye iskusstvennogo intellekta v oblasti startap-proyektov...

particular, those wishing to find work in the field of technology and artificial intelligence could have joined 10 recruiting centers, which belonged to large companies and corporations⁷.

At the forefront of research on AI issues in Vietnam today is the Joint Russian-Vietnamese Tropical Research and Technology Center. It was founded in 1987 in accordance with an agreement between the governments of the former USSR and Vietnam as a diversified scientific institution for science, technology and the environment. Since its establishment, the Center has been conducting unique theoretical and applied research that is strategic for Vietnam and Russia in such areas as ecology, biology, medicine, materials science, etc. The Tropical Center provides scientific and technical support for special-purpose products supplied to Vietnam, solves complex problems of their usage in tropical climates, creates new diagnostic drugs, tests the treatment of infectious diseases and operates to extend the time military personnel is able to work⁸.

In August 2023, the 35th anniversary of this unique facility, which has branches in three cities in Vietnam, as well as in Moscow, was widely celebrated in Hanoi. My grandfather and I had the opportunity to visit Nha Trang, where the main headquarters of the Center was located. My grandfather, who was then the first deputy chairman of the Russian-Vietnamese Friendship Society, was received as an honored guest by the Vietnamese co-director of the Center, General Khanh, who introduced him to the rich “economy” of the Center and spoke in detail about the main directions of its work. According to General Khanh, the Tropical Center effectively implements research programs on ecology and biodiversity, studying typical ecosystems of Vietnam. Based on this, ideas for maintaining the efficient and rational use of natural resources, as well as measures to protect biodiversity and ensure national defense and security, were proposed.

The current co-director of the Center, Dang Hong Chien, points out that the Tropical Center makes an effective contribution to the program of overcoming the consequences of chemical warfare – the massive use of highly toxic defoliants during the Vietnam War. The Center, he noted, has been involved in solving many scientific problems related to the detection, monitoring, analysis, evaluation and neutralization of dioxin-containing defoliants, including the reagent known as Agent Orange.

The governments of the two countries attach priority importance to cooperation within the Tropical Center – every year about 200 experts and scientists from Russia visit Vietnam to jointly conduct research works. During the Russian-Vietnamese business forum in July 2023, in which the Russian delegation was led by the Deputy Prime Minister D.N. Chernyshenko, the parties came to an agreement to expand scientific and technical cooperation based on the Tropical Center. Moreover, the strategy for the development of the Center until 2030, which involves “the program of research and technological work for the five years ahead, including joint work on the development of an AI algorithm”, was approved⁹.

Russian-Vietnamese cooperation in the development of artificial intelligence is kept on successfully. Thus, most recently, the Far Eastern Federal University (Vladivostok), Hanoi State University and the Russian bank SBER signed an agreement on the joint development of an

⁷ V g. Khoshimine otkrylsya V'yetnamskiy den' iskusstvennogo intellekta 2023 goda // Nhandan.vn. September 22, 2023. (In Russian). URL: <https://ru.nhandan.vn/v-g-hoshimine-otkriljsja-v-etnamskii-den-iskusstvennogo-intellekta-goda-post41861.html> (accessed: September 25, 2023).

⁸ Tropicheskiy Tsent. Rossiysko-V'yetnamskiy Tropicheskiy nauchno-issledovatel'skiy i tekhnologicheskii tsentr. (In Russian). URL: <https://tropcenter.ru/> (accessed: September 25, 2023).

⁹ Razvitiye industrii tekhnologiy II vo V'yetname // Thoidai.com.vn. February 13, 2023. (In Russian). URL: <https://huunghivietnga.thoidai.com.vn/detail-article-31182.html> (accessed: September 25, 2023).

artificial intelligence model to achieve sustainable development goals and on the opening of the Russian-Vietnamese Artificial Intelligence Center in Hanoi¹⁰.

It is indicative that in Russia, which found itself in difficult economic conditions in 2023 due to the sanctions imposed against it, special attention is paid to the development of AI. Thus, on September 26, 2023, the Chairman of the Russian Government M.V. Mishustin held a strategic session “The development of Artificial Intelligence”, where, in particular, he stated: “AI-based products help improve the efficiency of entire sectors of the economy, bringing them to a qualitatively new level. It is very important for us that they are created in Russia. This is necessary for ensuring independence from foreign suppliers and strengthening the security of our country”¹¹.

It is obvious that Russia’s scientific and technological cooperation in the field of AI with such states as Vietnam is vital, especially nowadays.

Of course, it is hard to argue with some skeptical experts, who believe that, compared with developed countries, the artificial intelligence industry in Vietnam is still at an early stage of development. At the same time, Vietnam is confidently reducing this gap and achieving certain success.

It is expected that the national strategy will give impetus to the development of AI in Vietnam, contribute to the socio-economic development of the country and ensure that by 2030 Vietnam will be among the top four countries in ASEAN and among the top 50 countries in the world in research and development of AI¹².

In addition, Vietnam has created its own “Silicon Valley” – the Hoa Lac Hi-Tech Park. According to the Deputy Minister of Science and Technology Bui The Dui, the construction of the National Innovation Center has begun at the Hoa Lac Hi-Tech Park. The center aims to support and develop Vietnam's startup and innovation ecosystem, promoting a renewed growth model based on the development of science and technology.

During the COVID-19 pandemic, AI technologies applied in the medical field in Vietnam have become a surprise to the whole world. AI has played a crucial role in helping reduce the workload of medical personnel, helping in epidemic prevention and control through contact tracing applications, etc. Thanks to the use of AI, Vietnam had the lowest rate of COVID-19 in the region.

At the same time, it should be noted that the development of AI may create problems for the Vietnamese labor market [Bakhteev]. Along with the benefits of AI, its massive adoption might disrupt existing employment in Vietnam. For example, the use of robots is increasing, and robots and machines will be able to perform many tasks that are currently performed by humans. This will lead to job losses, which would be fatal, as Vietnam is already experiencing a labor surplus.

In 2022, the UN Secretary-General Antonio Guterres paid an official visit to Vietnam. In his speeches he focused on the fact that the Vietnamese economy is one of the fastest growing in the world. The Secretary-General noted the achievements of Vietnam, which was twice elected to the Security Council in the UN. This country served as chairman of ASEAN several times, where it advocated cooperation and integration in Southeast Asia. “Vietnam has achieved, and in some cases exceeded, most of the Millennium Development Goals,” said the UN Secretary-General. “All this is

¹⁰ Rossiya i V'yetnam podpisali novyye soglasheniya o sotrudnichestve // Lenta.ru. April 06, 2023. (In Russian). URL: <https://lenta.ru/news/2023/04/06/soglashenia/> (accessed: September 25, 2023).

¹¹ Mikhail Mishustin provyol strategicheskuyu sessiyu “Razvitiye iskusstvennogo intellekta” // Government.ru. September 26, 2023. (In Russian). URL: <http://government.ru/news/49604/> (accessed: September 26, 2023).

¹² Razvitiye industrii tekhnologiy II vo V'yetname...

a powerful testament to the resilience and hard work of the Vietnamese people, as well as a policy that makes people the key point of development,” said Antonio Guterres¹³.

Conclusion

Modern Vietnam is a leading developing country in East Asia, an authoritative member of ASEAN, which pays significant attention to the development of science and technology. It appears that Vietnam has all the necessary conditions for the successful implementation of the tasks set by the Vietnamese government in the field of development and application of artificial intelligence: growing economic potential, trained scientific and technical personnel, successful cooperation with countries at the forefront of research in the field of AI. Vietnam’s balanced relationships with its foreign policy partners will also contribute to the development in the field of AI development.

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¹³ Glava OON otmetil stremitel’noye razvitiye V’yetnama posle voyny // Forbes.kz. October 22, 2022. (In Russian). URL: https://forbes.kz/news/2022/10/22/newsid_287168 (accessed: September 25, 2023).