ISSN: 2053-3578 I.F. 12.34

STAGES OF DEVELOPMENT OF ARTIFICIAL INTELLIGENCE AND ITS ROLE IN THE DEVELOPMENT OF SOCIETY

2nd year student of the Faculty of Mathematics and Informatics of the University of Information Technology and Management

Usmonova Ruxshona Rustamovna

ruxshonarustamovna0611@gmail.com

Abstract

This article discusses the concept of "artificial intelligence", one of the most relevant areas of modern technology, and the stages of its development. The article covers aspects such as what "artificial intelligence" is, its history, role in the development of society, stages of development and impact on humanity. It also discusses the widespread introduction of "artificial intelligence" in the current era in such areas as education, economics, healthcare, and security. The article focuses on the positive and negative impact of "artificial intelligence" on human life, as well as issues of intellectual property and information security.

Keywords: *Artificial intelligence, intellectual property, digital technologies, automation, WIPO, IT park, One million programmers, Youth technoparks, Face-ID, information security, neural networks, mental abilities, cryptography, hacking, algorithm, evolution.*

Аннотация

В данной статье рассматривается понятие «искусственный интеллект», одно из самых актуальных направлений современных технологий, и этапы его развития. В статье рассматриваются такие аспекты, как что такое «искусственный интеллект», его история, роль в развитии общества, этапы развития и влияние на человечество. Также обсуждается широкое внедрение «искусственного интеллекта» в современную эпоху в таких областях, как образование, экономика, здравоохранение и безопасность. В статье основное внимание уделяется положительному и отрицательному влиянию «искусственного интеллекта» на жизнь человека, а также вопросам интеллектуальной собственности и информационной безопасности.

Ключевые слова: *Искусственный интеллект, интеллектуальная собственность, цифровые технологии, автоматизация, ВОИС, IT-парк, Миллион программистов, Молодежные технопарки, Face-ID, информационная безопасность, нейронные сети, умственные способности, криптография, взлом, алгоритм, эволюция.*

ISSN: 2053-3578 I.F. 12.34

Introduction.

The idea of "artificial intelligence" and research in this field, the scientific approach to the production of "intelligent machines" first appeared in the scientific circle founded in 1956 based on the initiative of Stanford University (USA) professor John McCarthy. This circle includes Marvin Minsky, Honorary Professor of the Faculty of "Electronics and Computing Technology" of the Massachusetts Institute of Technology (USA), cybernetic Allen Newell, creator of intellectual (mental) programs, "universal problem solver" and "logical theorist" and famous psychologist Herbert Seyman of Carnegie-Mellen Institute (USA), prominent specialists in computing, Arthur Samuel, Oliver Selfridge, Manshanon and others would enter. It was in this circle that the concept of "Artificial Intelligence" appeared. Before entering the main content of our topic, we need to define the concept of "artificial intelligence" (AI), "intelligence" in general. It seems that this concept can be explained on the basis of a simple rule, but it is more difficult. This concept was interpreted differently by scientists working in different fields of science. The word "intellect" comes from the Latin word "intellectus", which means to know (determine), understand, or understand (mind). Here are three definitions of the word "intellect" created by psychologists (taken from the "Great Soviet Encyclopedia" and "Wester's American Dictionary"). These concepts help to define the meaning of the concept of "intelligence". Intelligence is the ability to think, rational knowledge, and so on. In general, thinking serves as a synonym for mental development of a person. Intellect (mind) is the ability to adequately assess any (especially new) situation by adjusting one's behavior. Intelligence is the ability to understand the relationship between facts in life. This ability is necessary for the development of actions leading to the achievement of a set goal.

From the concept of "intellect" defined above, it can be concluded that intelligence belongs only to people and is a unique measure of human mental ability. Psychologists have created such special methods that it was possible to determine a person's intellectual (mental) level through experience. As a result, it was found that the average level of intelligence is the same as the level of a person's physical abilities. If the average mental ability is considered to be 100 points, then this indicator can reach 150, 180, or even 200 points in highly capable people. American chess player, ex-world champion Robert Fisher's score was 187 points, English logician John Stuart Mill, who lived in the middle of the 19th century, could speak ancient Greek at the age of three, and his score reached 190 points. It should be noted that in the period of evolution, the intellect has gone through a period from the period of revolutionary

ISSN: 2053-3578 I.F. 12.34

development to the emergence of the modern human intellect. The evolutionary development of intelligence continues with a transition from a given stage to a more principled, excellently organized stage. The first work in the field of "artificial thinking" ("artificial intelligence") began in the middle of the last century. Although certain ideas were given by mathematicians and philosophers of the Middle Ages, the inventor of research in this direction fell to English mathematician and cryptographer Alan Turing (1912-1954). It was this scientist who later developed the procedure that bears his name: the Turing test. After the published work of this scientist, new research in the field of artificial intelligence began to appear. According to Turing, it is necessary to recognize only a machine that does not differ from a person in thinking during communication. Around the same time that the scientist's article was published, the concept called "BabyMachine" appeared in the world. The thought process involved in the development of artificial thinking and the creation of a machine was initially formed at the level of a child, and then gradually improved.

The term "artificial intelligence", i.e. "artificial thinking" appeared later: in the summer of 1956, a conference on artificial thinking was held at Dartmouth University in the USA. It was attended by dozens of scientists such as John McCarthy (Dartmouth University), Marvin Minsky (Harvard University), Claude Shannon (Bell Laboratories), Nathaniel Rochester (IBM), Herbert Simon (Carnegie University, Trenchard Moore (Princeton University), and the American computer scientist John McCarthy (1927-2011), who gave a lecture on the subject, went down in history as the author of the term "Artificial Intelligence". After this meeting, artificial the active development of machines with intelligence capabilities began. The military institutions that actively financed research in this field played an important role. Later, large companies were also interested in this field.

Modern life has begun to put more complex tasks before researchers. Therefore, artificial thinking developed in completely different conditions compared to the time of its emergence. Globalization processes, activities of criminals (hackers) in the digital network, development of the Internet and other problems have given scientists the task of solving complex tasks in the field of artificial intelligence. Despite the successes in this area in recent years (for example, the emergence of autonomous techniques), the voices of critics who do not believe in the creation of "artificial intelligence" in reality have not stopped, in their opinion, it is not such a capable program. Philosophers do not agree on the nature of human intelligence and its status. Many ideas related to solving "artificial thinking" can be found in the scientific works devoted

ISSN: 2053-3578 I.F. 12.34

to "artificial thinking". There is also a single concept of what kind of car can be considered smarter in this matter.

Today, along with economic globalization, intellectual property rights and their protection are also important in the development of our country. Because intellectual property protection, in addition to improving the state's own industry through innovation, is a unique "key" tool in the field of technology transfer from abroad, investment and employment of the population. In our country, consistent measures have been taken to improve the mechanisms of introducing innovations into economic sectors, to ensure its competitiveness, to create conditions aimed at the development of active entrepreneurship and innovative activities, and to ensure reliable legal protection of intellectual property. What is "artificial intelligence"? "Artificial intelligence" means an intelligent artificial system that performs logical and creative human functions. The term can also be applied to any technology that exhibits characteristics associated with the human mind, such as learning and problem solving. The ideal characteristic of artificial intelligence is the ability to evaluate and take actions that have the best chance of achieving a specific goal. Currently, "artificial intelligence" consists of algorithms and software systems designed to perform various actions, and it can handle several tasks that the human mind can perform. While scientists are eager to experiment with "artificial intelligence," many people are wary of the phenomenon. Even the head of Tesla, Elon Musk, called it a "major threat" to humanity and a possible source of war and unemployment. The history and stages of development of "artificial intelligence"?

The development of "artificial intelligence" as a scientific direction was possible only after the creation of EHM. This happened in the 20th century. At this time, N. Viner (1894-1964) created his main works on the new science of cybernetics. The term artificial intelligence was proposed in 1956 at a seminar of the same name at Stanford University (USA). The workshop is designed to develop logical tasks, not calculations. After the recognition of "artificial intelligence" as an independent field of science, it was quickly divided into two main areas: neurocybernetics and "black box" cybernetics. And only now is the tendency to unite these parts into a single whole [4]. A great advance in the practical application of "artificial intelligence" took place in the mid-70s, when instead of searching for a universal algorithm of human thinking, the idea of modeling the specific knowledge of experts and developing software tools and systems, where knowledge is the most important component, came.

In the 70s, experts in the field of "artificial intelligence" tried to model the complex process of human thinking, looking for general methods of solving tasks and the use of these methods in

ISSN: 2053-3578 I.F. 12.34

universal programs. But the development of such programs was a very difficult task, because the wider the class of tasks that one program can solve, the greater its capabilities in solving a specific task. Consistent measures are being taken to shape the methods of presenting information so that these problems and tasks can be solved, to create conditions aimed at the development of innovative activities, and to ensure reliable legal protection of intellectual property. What is "artificial intelligence"? "Artificial intelligence" means an intelligent artificial system that performs logical and creative human functions. The term can also be applied to any technology that exhibits characteristics associated with the human mind, such as learning and problem solving.

The ideal characteristic of artificial intelligence is the ability to evaluate and take actions that have the best chance of achieving a specific goal. Currently, "artificial intelligence" consists of algorithms and software systems designed to perform various actions, and it can handle several tasks that the human mind can perform. While scientists are eager to experiment with "artificial intelligence," many people are wary of the phenomenon. Even the head of Tesla, Elon Musk, called it a "main threat" to humanity and a possible source of war and unemployment. The history and stages of development of "artificial intelligence"? The development of "artificial intelligence" as a scientific direction was possible only after the creation of EHM. This happened in the 20th century. At this time, N. Viner (1894-1964) created his main works on the new science of cybernetics.

The term artificial intelligence was proposed in 1956 at a seminar of the same name at Stanford University (USA). The workshop is designed to develop logical tasks, not calculations. After the recognition of "artificial intelligence" as an independent field of science, it was quickly divided into two main areas: neurocybernetics and "black box" cybernetics. And only now is the tendency to unite these parts into a single whole [4]. A great advance in the practical application of "artificial intelligence" took place in the mid-70s, when, instead of searching for a universal algorithm of human thinking, the idea of modeling the specific knowledge of experts and developing software tools and systems in which knowledge is the most important component came. who tried to model the complex process of human thinking, looking for the use of these methods in universal applications. But the development of such programs was a very difficult task, because the wider the class of tasks that one program can solve, the greater its capabilities in solving a specific task.

Methods of providing information, forming these problems and tasks so that they can be solved, and the research institute for the development of "artificial intelligence" has opened a post-

ISSN: 2053-3578 I.F. 12.34

higher education institute for the specialization "Digital technologies and artificial intelligence". A total of 28 target quotas have been allocated for basic doctoral studies and intern-research in the field of "artificial intelligence". Out of this, 14 admission quotas were allocated for basic doctoral study and 14 for trainee research. In addition, 10 young scientists selected in the field of digital technologies and "artificial intelligence" will be sent to leading foreign scientific organizations for short-term research internships in 2021-2022. The total value of the support for scientific and technical research and innovative developments in the field of "artificial intelligence" is 15.1 billion. 9 projects with a duration of 2021-2024 are being implemented. Innoweek.uz-2021, an international week of innovative ideas held annually by the Ministry of Innovative Development, an international conference on "Artificial intelligence - the basis of technological development" was held on November 24 of this year. "Artificial intelligence" is entering our lives, but what is it? birth is natural. Therefore, we bring to your attention some information about "artificial intelligence". "Artificial intelligence" is neither a format nor a function. In short, "artificial intelligence" is a system or technology capable of imitating human behavior in the performance of certain tasks, gradually improving using the received information. In general, artificial intelligence is neither a format nor a function, but a process, which includes data collection, analysis, etc. When talking about "artificial intelligence", it is necessary to analyze its place in business and information technology. The gradual penetration of "Artificial Intelligence" into these areas will ensure the increase in the number of "Artificial Intelligence" tools.

By "artificial intelligence" most people understand that robots are involved in various fields. But the term "artificial intelligence" does not mean that robots will replace humans. Its main goal is to expand the limits of human abilities and capabilities. Therefore, technologies like these are a valuable business resource. At first, the term "artificial intelligence" was used to perform tasks that could only be performed by humans, such as customer service or playing chess. Also, in-depth study of computer technologies is considered as artificial intelligence. But customer service, various online games and in-depth study of computer technologies are a small part of artificial intelligence technologies. True, "artificial intelligence" technologies help to increase productivity by automating tasks performed by humans. However, its scope is expanding now, with the help of "artificial intelligence" it is possible to determine the character of people, the abilities of students, and the employee's views on work. There are three reasons for the wide use of "artificial intelligence". Currently, various reasons are given for the introduction of "artificial intelligence" into the fields, of which we will mention the three most

ISSN: 2053-3578 I.F. 12.34

important ones. The first is low-cost high-performance computing resources. The second is the availability of large amounts of information for education.

In order for an "artificial intelligence" product to make accurate predictions, it must process large amounts of data. Due to this factor, various tools, in particular, simple and cheap tools for data storage and processing, and various algorithms have been created. Third, "artificial intelligence" products strengthen competitiveness. It can offer many tools for companies to reduce costs and risks, expand market access and other beneficial factors. As a result, companies that have introduced "artificial intelligence" will be more resistant to competition. However, as in all fields, there are a number of difficulties in introducing this type of innovation. In particular, there is a lack of qualified personnel and a lack of information for its implementation. This is because the more data there is, the more accurate the AI's predictions will be.

"Artificial intelligence" technologies are at the stage of development. "Artificial intelligence" makes it possible to monitor infrastructure, collect and process large amounts of data, technical and medical diagnostic systems, create personal learning trajectories, conduct behavioral analysis. "Artificial intelligence" is a whole range of solutions from vacuum cleaners to space stations. This year, the analytical company "Gartner" published a study that said that "artificial intelligence" technologies are still in the development stage, and a fully developed market is still far from forming. According to the company's experts, many enterprises and organizations want "artificial intelligence" to help solve industry problems. These companies want to expand the tools of "artificial intelligence" to anticipate risks and manage all processes based on forecasts. Now researchers face more complex tasks. In particular, it is necessary to create new tools for Internet development, elimination of technological problems, digital economy. Also, one of the most important tasks of our scientists and researchers conducting scientific work in Uzbekistan is to provide close assistance in the introduction of "artificial intelligence" to science.

The list of used literature:

1. Mirziyoev Sh.M. Tanqidiy tahlil, qat'iy tartib – intizom va shaxsiy javobgarlik har bir rahbar faoliyatining kundalik qoidasi bo'lishi kerak. O'zbekiston Respublikasi Vazirlar Mahkamasinig 2016 yil yakunlari va 2017 yil istiqbollariga bag'ishlangan majlisidagi O'zbekiston Respublikasi Prezidentining nutqi. // Xalq so'zi gazetasi. 2017 yil 16 yanvar, № 11.

2. Qosimov S.S. Axborot texnologiyalari. – T.: Aloqachi, 2006 – 369 b.

3. А. Рассел. И. Норвиг. Искусственный интеллект: Современные походы.// -Издателство Пирсон Прентис Холл. – 2009. - 1132p.

4. Yusupbekov N. R. Boshqarishning intellektual ti/.imlari va qaror qabul qilish.

5. / N. R.Yusupbekov. - Toshkent: «O'zbekiston milliy ensiklopediyasi» Davlat ilmiy nashriyoti, 2015.-572 b.

6. Nazarov X. N. Robotlar va robototexnik tizimlar. Darslik. - «MAShHUR PRESS», 2019, - 236 b.

7. Zaripova G.K., Avezov A.A. Improving the implementation of digital technologies in the process of training future teachers. U55 "Universum": технические науки: научный журнал. – № 10(103). Часть 1. М., Изд. «МЦНО», 2022. – 72 с. –Электрон. версия печ. публ. 28-30-стр. https://7universum.com/pdf/tech/10(103)%20[15.10.2022]/Zaripova.pdf.
https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=1xFAx

- AAAAAJ&pagesize=80&sortby=pubdate&citation_for_view=1xFAx7AAAAAJ:B3FOqHPlNUQC

8. Zaripova G.K., Avezov A.A. Raqamli axborot texnologiyalari. "Дурдона" нашриёти. – Бухоро: 2022 й. – 620 б. DARSLIK.
https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=1xFAx

8. Zaripova G.K., Avezov A.A., Qobilov K.H. Developing the implementation of the digital technologies' tendency in the training of future teachers. European Journal of Molecular & Clinical Medicine ISSN 2515-8260 Volume 09, Issue 07, 2022. WOS. 5547- 5563- pages. https://www.ejmcm.com/article_20660.html;https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=1xFAx7AAAAAJ&pagesize=80&sortby=pubdate&citation_for_view=1xFAx7AAAAAJ:5Ul4iDaHHb8C

10. Zaripova G.K., Avezova Sh.M., Salimov T.B. The problem of employment in the digital economy in the government of the russian federation. Academic Journal of Digital Economics and Stability 2024, Volume 37, Issue 2, feb-2024,ISSN 2697-2212. 1-7. https://economics.academicjournal.io/index.php/economics/article/view/885/847, https://economics.academicjournal.io/index.php/economics/.
https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=1xFAx7AAAAAJ&pagesize=80&sortby=pubdate&citation_for_view=1xFAx7AAAAAJ:rmuvC79q63oC