ARTIFICIAL INTELLIGENCE IS THE BASIS OF TECHNOLOGICAL DEVELOPMENT

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Abstract: This article defines the term artificial intelligence. specific conveniences and advantages of artificial intelligence, principles widely used in world experience are shown. In developed countries, the use of opportunities of artificial intelligence and modern information technologies in the social sphere, in particular, in health care, education, employment, social protection and other areas, as well as the results of the development of artificial intelligence for society are shown.

Keywords: Natural Language Processing, artificial intelligence, Peer-to-peer network, personal data, software.

1 INTRODUCTION

In today's conditions, where science and information and communication technologies are rapidly developing, in the developed countries of the world, state and society management, economy, industry, social protection, education, medicine, employment, agriculture, defense, security, tourism and other fields, modern information technologies and the widespread use of artificial intelligence capabilities is becoming a tradition.

In Uzbekistan, it is set as a priority task to take a place among the leading countries with innovative development by 2030 through the development of informatization and digital economy. On approval of the "Digital Uzbekistan - 2030" strategy of the President of the Republic of Uzbekistan Sh.M. Mirziyoyev on October 5, 2020 and measures for its effective implementation"

2 METHODOLOGY

Organization of scientific research aimed at comprehensive implementation of the Strategy "Digital Uzbekistan - 2030" and introduction of artificial intelligence technologies in economic sectors, social sphere and state administration system; conducting fundamental and applied scientific research in the field of artificial intelligence, forming a scientific ecosystem for the development of digital technologies; automatic development of management and production processes based on artificial intelligence technologies, production of innovative programs and production models, algorithms and software; development of artificial intelligence technologies abroad, their launch and implementation of joint projects with leading innovative scientific foundations

It is known that modern artificial intelligence consists of algorithms and software systems designed to perform various actions, and performs a number of tasks that can be performed by the human mind on the basis of information entered into the information base. Also, artificial intelligence is a "smart" technology capable of making logically consistent judgments and recommendations, including sophisticated analytics and big data processing programs. Artificial intelligence is considered by experts as the basis of the fourth industrial revolution.

According to scientists, social assistance, social insurance and employment programs form the basis of social protection of the population.

In developed countries, the use of opportunities of artificial intelligence and modern information technologies in the social sphere, in particular, in healthcare, education, employment, social protection and other areas, is becoming widespread.

Therefore, in our country, until 2030, the tasks of rapidly implementing digital transformation processes in all areas and thereby strengthening the country's economic power and taking a worthy place in the world community have been set. Artificial intelligence is a set of programs designed to reproduce human skills. Artificial intelligence is an ability that helps to complete tasks in a timely and complete manner, such as finding solutions to existing problems, planning, acquiring knowledge, and working on oneself.

Broadly speaking, artificial intelligence is a branch of science that develops analytical systems capable of learning and solving complex problems. In the narrow sense, artificial intelligence is a computer training technology based on human thinking.

The first artificial intelligence program was developed in 1951 by British computer scientist Christopher Strachey. In 1952, this artificial intelligence program learned to play checkers with humans while

predicting the moves of its partners. English mathematician and computer scientist Alan Turing even mentioned this system in an article on chess programming published at that time.

Scientists working in the field of artificial intelligence divide artificial intelligence technology into four main types:

Weak artificial intelligence is an artificial intelligence that does not have the ability to accumulate experience and use the collected information. Weak artificial intelligence is designed to perform a specific task and cannot perform additional functions.

Artificial intelligence with limited memory is designed to remember pieces of information and analyze the current situation based on them. The accumulated experience is not stored in memory and is not integrated with other data.

Strong artificial intelligence — powerful machines can understand human thinking and motivations, communicate with humans, and even have social and emotional intelligence. Powerful artificial intelligence-like machines already exist. These include Apple's Siri and Yandex's virtual assistant Alisa. These powerful artificial intelligence tools teach people how to communicate.

Superintelligence is the final stage in the development of artificial intelligence that surpasses humans in every way. The emergence of systems of this level is possible when scientists fully study and model the working system of the human mind.

The application of the program on professional-qualification compatibility based on artificial intelligence in the conditions of Uzbekistan allows to ensure the employment of job seekers employed in the informal sector, especially in the one-time job markets, and to cover them with social protection. At the initial stage, artificial intelligence technologies can be offered through applications that can be used on mobile devices to attract people in the informal sector to daily and seasonal jobs and ensure their employment.

Artificial intelligence-based projects can be considered as a number of promising projects by integrating and expanding the database of existing programs and government agencies in the conditions of Uzbekistan.

For example, creating an "online application" system for receiving one-time or long-term financial assistance in existing social protection programs ("Social Register" - "Iron Daftar", "Women's Daftar" and "Youth Daftar"). In this case, the applicant can enter the relevant information into the system and quickly determine the compliance with the criteria. If at the first stage the evaluation of the criteria is carried out by the relevant employee-expert, with the development of the system, this process will be carried out automatically at the next stage, leaving no place for the human factor. A similar experience of "online application" is used in allocating state subsidies for preferential mortgage loans and payments.

Currently, the information of "Temir Daftar" is entered into the electronic database by the respective hokims. The introduction of artificial intelligence technology into this process reduces the human factor by evaluating applicants in need of social protection according to various criteria and requirements, and information about the social status of a family or citizen in need is periodically updated autonomously. With artificial intelligence controlling the entry and exit of needy families into the "Iron Book", the efficiency and transparency of the program is ensured. It should be noted that the basis of artificial intelligence is a database, and their source can be different. Regular filling and expansion of the database increases the analytical capabilities and efficiency of artificial intelligence.

It is possible to form an artificial intelligence database from currently available data sources in Uzbekistan and use them effectively. Including:

- Unified identification system - (id.gov.uz);
- Open data portal of the Republic of Uzbekistan – (data.gov.uz);
- Electronic government system database – (my.gov.uz);
- State Services Agency database – (davkhizmat.uz);
- database of various ministries and agencies.

Also, in the world experience, in the formation of an artificial intelligence database in programs oriented to the social sphere, data from national ID systems, population census and tax payers database, medical, banking, insurance companies, buyers of shops and markets, mobile communication operators, as well as the population's utility payments and indebtedness, credit sources such as history, activity in social networks are used within the law.

It should be noted that privacy, storage and management of personal data are important when introducing artificial intelligence into social and other fields. Because the ethical aspects of the use of artificial intelligence are in the focus of attention, especially the US, Great Britain, EU member states and leading international organizations, and the issue of human rights and personal data, as well as the danger of using artificial intelligence for political and destructive purposes, are urgent.

In some countries, in particular, China and Russia, there are accusations that artificial intelligence and ICT

are being used to limit the personal rights and freedoms of citizens and for political purposes. Therefore, it is appropriate to pay special attention to these issues when creating the legal basis for the use of artificial intelligence. It is also important to balance the use of personal data and privacy rights in the implementation of artificial intelligence and ICT and their use to ensure national security.

The advent of the Internet has helped the rapid development of technology. Artificial intelligence technology has been an independent technology for three decades, but now the applications of this technology have become widespread in all areas of life. Artificial intelligence is known by the abbreviation AI and is the process of recreating the human mind in machines.

According to a Gartner report, the adoption of artificial intelligence grew from 4 percent to 15 percent in 2018-2019. Many new and emerging technologies are incorporated into artificial intelligence. Startups of giant organizations are participating in a major race to introduce artificial intelligence to improve productivity and intelligently analyze data.

Latest Artificial Intelligence Technologies:

Natural Language Processing (Natural Language Processing). Machines process and communicate differently than human brains. Natural language generation is a modern technology that converts structured data into native language. Machines are programmed with algorithms to convert data into the format required by the user. Natural language is a subset of artificial intelligence that helps content developers automate and deliver content in the right format.

Speech recognition. Speech recognition is another important piece of artificial intelligence that converts human speech into a useful and understandable format for computers. Speech recognition is the bridge between human and computer interaction. The technology recognizes and converts human speech in several languages. iPhone Siri is a classic example of speech recognition.

Virtual agent. Virtual agents have become valuable tools for instructional designers. A virtual agent is a computer application that interacts with humans. Web apps and mobile apps provide chatbots as service agents to interact with customers and answer their questions. For example, Google Assistant helps organize meetings, and Amazon Alexa makes shopping easier.

Decision management. Modern organizations are implementing decision management systems to transform and interpret data into predictive models. Enterprise-level applications implement decision management systems to obtain up-to-date information while analyzing business data to aid in organizational decision-making. Decision management helps to make quick decisions, avoid risks and automate the process. Decision management system is widely used in financial sector, healthcare sector, trade, insurance sector, e-commerce, etc.

Deep learning. Another branch of artificial intelligence based on artificial neural networks is Deep Learning. This technique teaches computers and machines to learn like humans. The term "deep" was coined because neural networks have hidden layers. Typically, a neural network has 2-3 hidden layers and can have a maximum of 150 hidden layers. Deep learning is efficient in big data to train model and graph processing unit. Algorithms work in a hierarchy of predictive analytics automation. Deep learning is successfully used in many fields such as aerospace and military to detect objects from satellites, help improve worker safety by detecting dangerous events when approaching a working machine, help to detect cancer cells, etc.

Machine learning. Machine learning is a branch of artificial intelligence that allows a machine to extract meaning from a set of data without being programmed. Machine learning techniques help businesses make informed decisions with data analysis powered by algorithms and statistical models. Enterprises are investing heavily in machine learning to benefit from its application in various industries. The healthcare and medical profession needs machine learning techniques to analyze patient data for disease prediction and effective treatment.

Automation of processes through robotization. Process automation through robotics is an application of artificial intelligence that configures a robot (software application) to interpret, communicate, and analyze data. This discipline of artificial intelligence helps to automate repetitive and rule-based operations that are partially or fully manual.

Peer-to-peer network. Peer-to-peer networks help connect different systems and computers to share data without having to pass the data through a server. They have the ability to solve the most complex problems. This technology is used in cryptocurrencies. The use of this technology provides savings, because separate computers are connected, and servers are not required.

Hardware optimized for artificial intelligence. Artificial intelligence software is in high demand in the business world. With the increased focus on software comes the need for hardware to support the software. Traditional chip does not support artificial intelligence models. Next-generation artificial intelligence chips are being developed for neural networks, deep learning, and

computer vision. AI hardware includes CPUs to handle scalable workloads, special-purpose embedded silicon for neural networks, neuromorphic chips, and m Major organizations such as Nvidia, Qualcomm, and AMD are creating chips that can perform complex artificial intelligence calculations. Healthcare and automotive could be areas that benefit from these chips.ore.

3 CONCLUSIONS

Thus, it should be emphasized that the opportunities for the development of e-commerce in Uzbekistan are growing year by year. In conclusion, it can be noted that in our country there are opportunities and the need to use artificial intelligence technologies in social protection programs, and it is appropriate to introduce and use artificial intelligence technologies by involving leading local experts and foreign companies in relevant programming areas. Choosing the right way to solve the existing problems of introducing artificial intelligence technologies in Uzbekistan is reflected in the well-being of the people, the progress of our society, and our economic development. The objective and future goals of artificial intelligence are to eliminate errors and biases by automating all complex human activities.

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