

Scientific and Technological Progress, Problems and Solutions In the Application of Artificial Intelligence

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Annotation: This article is devoted to the current topic of modern science, the problems of the relationship between artificial intelligence and scientific and technological progress. In the modern information society, the role of artificial intelligence is progressing and is applied in all branches of science and technology. The article, based on factual materials, thoroughly shows the role and place of artificial intelligence in the modern development of science and technology.

Key words: artificial intelligence, progress, phenomenon, engineering technology, object, subject, technology, information society, motivation.

Technology functions and develops only when it is combined with a person; in order to understand the functioning and development of technology, it is necessary to study and comprehend the system of relations between man and technology. This phenomenon is in fact inextricably linked with engineering activities and the system of engineering thinking. The “Man-Technology” system is the object of attention of most specialist scientists and sciences.

Engineering Psychology: This is expressed as follows

- analysis of the role of a person in the control system and ways of his connection with other components of the system;
- structural analysis of the operator’s activities (structure);
- analysis of factors of perfection, consistency and effectiveness of operator actions;
- study the processes of obtaining information by a person about the state of controlled objects, processing information by a person;
- is expressed in such issues as the study of analysis processes, their maintenance and the formation of solutions to the behavior of a person managing an activity.

A person comprehensively masters work activity in the “man-technology-environment” system, strives to ensure safety, comfort and efficiency. Technical philosophy not only creates a methodology for studying the man-machine system, but also studies the most general principles of the connection between man and machine.

1. Honesty, the principle of honesty. According to this principle, in the “man-technology” system, technology performs all the functions previously performed by humans - the target (primary) functions of natural human organs and technical means are proportional to each other: both adapt natural forces and objects (things) for needs of man is a recreating, shaping weapon.

2. The principle of compensation and replenishment. The essence of this principle is that technology is considered as an artificial continuation of natural human organs (arms, legs, eyes, ears, etc.) and complements them. The machine is a complement to the imperfections of natural human organs.

3. Functional modeling function. Functional modeling is based on the two previous principles, since it is known that technology reproduces the natural human organs based on the law of technology, that is, it re-imposes on technology the functions of human organs, in the sense that the machine not only imitates the human structure, but also assigns everything to technology more and more functional tasks performed by humans.

If we look at the history of technological development, then in the early stages of human history, the relationship between technology and man, and man and technology, is not very noticeable. The technology of that period was based mainly on the anthropological principle, that is, technology was developed as an extension of the natural human organs. For example, hammer, hoe, hoe are an extension of the function of the hand, shovel, etc. extension of the function of the legs v.x. like

Structural similarity in the relationship between man and technology was a trend that characterized the era when more manual technologies were practiced. When a machine differs from a human in its structure, it can perform human functions in a technological process, even if they are not exactly the same.

Intelligence is human cognitive activity in a broad sense, thinking and intellectual abilities in a narrow sense. Human intelligence reflects the essential legitimate connections and connections between things and events in the circular universe, and also allows for the creative transformation of existence.

Progress in the development of scientific thinking - cybernetics, systems theory, information theory, etc. There is a tendency towards understanding intelligence as an integral bilingual system, and there is an increasing tendency for its function to transform spatio-temporal images into symbolic-operational language, (speech) symbols. In this case, intelligence manifests itself as the activity of cognition, understanding and realizes such goals as the study of any complex systems, information processing, self-regulation (samphagation).

Artificial intelligence manifests itself as a unique combination of software and hardware. When used in practice, human intellectual activity occurs in the class of results of comprehensively generalized problems and solutions. The concept of "artificial intelligence" is given a different meaning; intelligence in an electronic computer, capable of solving logical and any computational problems, is equated to the ability to solve complex and broader sets of problems that can be solved even by humans.

The concept of "artificial intelligence" was introduced into science by DJ McCarthy in 1956. "Artificial intelligence" is one of the newest sciences, which emerged in the second half of the 20th century on the basis of knowledge in the field of computer technology, mathematical logic, (programming) programming, psychology, linguistics, neurophysiology and other fields. The name of the new science appeared in the late 60s; in 1969, the first international conference on AI (artificial intelligence) was held in Washington (USA).

At the same time, "artificial intelligence" refers to technical systems with specific functions and characteristics. As computers improve, artificial intelligence is used in creative processes: for example, creating musical melodies, drawing pictures, creating simple stories and poems, translating texts from one language to another, noticing different images (by identification), proving theorems, playing chess. With the help of ECM, it is possible to automate types of human mental activity

through a suitable program. To do this, it is necessary to create programs for solving problems without calculations. A computer can claim intelligence when it (the computer) or the computer can create programs capable of solving incomputable (non-computational) problems based on its own independent knowledge. Therefore, the main goal of creating “artificial intelligence” is to enable machines to solve such huge (metaprocedural) organizational problems that they can be used in human creative intellectual activity.

The main ways to model artificial intelligence:

1) Bionic modeling – direct modeling of the human brain, i.e. modeling of each nerve (nerve) cell and the connections between these cells in order to reveal the secrets of thinking and create intelligent automata;

2) Software-pragmatic modeling is the modeling of intellectual activity using computers. Its main goal is to create algorithmic and software computers capable of solving intellectual problems no worse than humans;

3) Evolutionary modeling. In this case, we are not talking about modeling an existing thing, but about behavior and activity aimed at modeling technical intelligence according to the proposed criteria in the right direction in the future. The creation of interactive intelligent systems is envisaged. The connection between natural and artificial intelligence.

This issue is always on the agenda. Currently, there are two approaches to the study of natural and artificial intelligence:

1) Technocratic optimism: expresses the difference between artificial and natural intelligence with technical characteristics, that is, it puts forward the point of view that their difference is not qualitative, but quantitative. An attempt is made to prove that the rapid development of ES is the same as human thinking and mechanized artificial elements and actions of “thought”.

2) Technocratic pessimism: the distinction between natural and artificial intelligence cannot be lost, since the model of the brain differs from natural intelligence in the same way as the model differs from its model, and the following arguments are given:

- difference in origin - natural evolution and the creation and formation of artificial intelligence artificially from pre-prepared parts of different origins;

- natural intelligence manifests itself as an active changing attitude of a person to objective and subjective reality, and in computer thinking, associated with the emotional aspects of mental activity, there are no such subtle mental states as feelings, a conscious attitude towards the world. , there is only behavior as an imitation of human intellectual activity, intelligence exists.

- a person can change his program of action in accordance with the goal, according to specific conditions, while the new program is not a strictly logical consequence of the old one; computational thinking cannot solve a particular question or problem, nor can it solve such questions on its own.

- human intelligence works with concepts and judgments of a dialectical nature, that is, it uses abstraction without emotions and color images, while a machine works with calculations based on the rules of formal logic;

- subconscious activity, intuition is of great importance in the functioning of the human brain, it cannot be formalized, so it can be expressed in the form of a computer program.

- the human intellect has a fundamentally unique structure, the psyche is a whole organic process in which there are no separate, free parts or content; and a computer is a discrete digital structure and can simulate only parts of complex and similar actions.

Virtual reality is an interactive environment that is born, created and controlled through an object that can technically be created using a computer. It is similar to reality, a monad or an imaginary event and is a three-dimensional graphic (drawing) image. its physical properties (simulation), reflection

(size, movement, etc.).x.) is a manifestation of its abilities - development, absorption, presence in space.

Synonyms for virtual reality: artificial reality (existence), electronic reality, consists of a computer model of reality. For a comprehensive perception of reality, the computer must implement a set of functions and reactions of virtual reality in a unit of real time. A virtual reality object should look like a physical reality object. The user has the ability to influence the virtual reality object. In the virtual world, physical phenomena are created, just like in the real world (e.g. gravity, water movement, object collisions), in order to discover entertaining games, users of the virtual world create and simulate phenomena that do not occur in space, e.g. flights, all kinds of fantastic objects and such as the creation of objects. That is, an environment is created that creates the effect of direct human participation, and in this objective world the feeling of integrity and unity of a person with a computer is nearby, felt, felt.

REFERENCES

1. Пономарев Я. Психология творения. Избранные психологические труды. - М - Воронеж.: Московский психолого-социальный институт, МОДЭК, 1999. - 480 с
2. Mahammadovna, S. I. (2021). Needs and factors for developing professional and creative abilities of students of higher educational institutions. *Annals of the Romanian Society for Cell Biology*, 25(6), 2200-2209.
3. Махаммадовна S. I. O'zbekistonda inson huquqlarini ta'minlash: Ijtimoiy xizmatlar agentligi misolida //CENTRAL ASIAN JOURNAL OF SOCIAL SCIENCES AND HISTORY. – 2023.
4. Матюшкин А.М. Мышление, обучение, творчество. - М.-Воронеж.: Модэк, 2003. - 718 с.
5. Махаммадовна, S. I. (2022). Klaster texnologiyasi asosida bolajak muhandislarni kasbiy ta'uorgarligini takomillashtirish. *Мугаллим ҳам ўзликсиз билимлендириў. Илмий-методикалық журнал*.
6. Сирожиддинова, И. М. (2022). Таълим жараёнини мониторинг тадқиқ қилиш учун таъхис материалларини ишлаб чиқиш. *Results of National Scientific Research International Journal*, 1(6), 33-38.
7. Клевцова В.Л. Формирование творческих способностей младших школьников в условиях развивающей среды : Дис. ... канд. пед. наук. Саратов, 2000. - 168 с. Тейлор К. Основы делопроизводства в современном бизнесе. : Пер. с англ. -- М.: Сол Систем, Финансы и статистика, 1997. - 172 с.
8. Mahammadovna, S. I. (2023). Features of Cluster Design in Modern Paradigms of Education. *Telematique*, 22(01), 348-355.
9. Сироджиддинова И. Та'лим жаъронида innovation texnologiyalar //Цифровизация современного образования: проблема и решение. – 2023. – Т. 1. – №. 1. – С. 57-60.
10. Насиров, И. З., & Сирожиддинова, И. М. (2023). «Бузуқ телефон» педагогик технологияси асосида машғулотларни олиб бориш. *PEDAGOG*, 6(2), 291-298.
11. Сирожиддинова, И. (2022). Методика смешанной отборки при комплексном проектировании профессиональной подготовки будущих инженеров. *Общество и инновации*, 3(7/S), 87-92.
12. Sirojiddinova, I. M. (2015). Engineering Students Have Succeeded In Creating A Technology Cluster. *Pedagogy & Psychology. Theory and practice*, 22..
13. Zakirovich, N. I., & Mahammadovna, S. I. (2023). Levels of development of human abilities. *Новости образования: исследование в XXI веке*, 1(7), 341-344.
14. Iroda, M. (2019). Rational Methods Awakening and Stimulating University Students Professional and Creative Abilities. *Eastern European Scientific Journal*, (1).

15. Maxammadovna, S. I., & Paxlavon o'g'li, M. F. (2023). O'zbekistonda Inson Huquqlarini Ta'minlash, Ijtimoiy Xizmatlar Agentligi Misolida. *Central asian journal of social sciences and history*, 4(10), 17-19.
16. Mahammadovna S. I. Improving the professional training of future engineers based on the cluster approach //Spectrum Journal of Innovation, Reforms and Development. – 2022. – Т. 3. – С. 45-47.
17. Maxammadovna S. I. Pedagogical opportunities for the development of professional and creative abilities in students //International Journal for Innovative Engineering and Management Research.... – 2021.
18. Mahammadovna S. I. Development of a methodological system of training based on the cluster approach //Archive of Conferences. – 2022. – С. 30-33.
19. Sirojiddinova I. Technological character of the educational process when designing pedagogical objects //Solution of social problems in management and economy. – 2023. – Т. 2. – №. 2. – С. 130-132.
20. Sirojiddinova I. The importance of the cluster approach to the creation of a motivational and methodological teaching system //Вестник Ошского государственного педагогического университета имени А. Мырсабекова. – 2022. – Т. 2. – №. 2. – С. 146-150.