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PHILOSOPHICAL REFLECTION ON ARTIFICIAL INTELLIGENCE AND ITS IMPACT ON THE DEVELOPMENT OF SOCIETY, HUMAN, AND EDUCATION

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Abstract

Urgency of the research of artificial intelligence research in a digital society presents numerous causal changes, among them: space research, biotechnology, nanotechnology, digital technology, etc. The implications for human beings and human civilisation are significant as they affect a number of already existing contemporary issues such as economics, politics, ethics, law, psychology, conflictology, sociology, and ecology. Anthropology has to return to the existence of human beings in a society of artificial intelligence, consciousness and even the physical body. The study conceptualises artificial intelligence as a factor of ecosystem growth in the context of technological, ontological, and anthropological dimensions. **The research objectives:** 1) to theorise artificial intelligence as a potential and resource for use in all sectors of the socio-economic sphere in the context of technological dimensions; 2) to clarify the convergence of artificial intelligence and its main components in the context of ontological dimensions; 3) to reveal the role of artificial intelligence in enhancing the digitalisation of society and humans in the context of anthropological dimensions. In the research we are guided by the works of scholars who have studied and are studying the problems of artificial intelligence as a complex social, economic, and cultural phenomenon: R. Andriukaitienė, N. Boström, A. Vance, P. Diamandis, S. Kotler, P. Dickson, L. Kai-Fu, and K. Kell, K. Kell, and others. **Research methodology.** The theory of artificial intelligence is a complex multidisciplinary science, which is located at the junction of economics, sociology, computer science, mathematics, psychology. Summarizing the processes of interdisciplinary interaction of artificial intelligence, we note that its study requires an interdisciplinary approach based on the synthesis of scientific knowledge, as revealing the content and principles of functioning of a complex invariant system of artificial intelligence. To analyze the modern model of artificial intelligence, it is necessary to apply a systematic institutional-evolutionary approach. By analysing different methodological approaches, it is necessary to acknowledge the presence of an anthropogenic component, as the methodology of scientific research is based on the method of information-anthropogenic analysis based on the fundamental position that no artificial intelligence processes are possible without information/data as an object and human as a subject of cognition. In addition, the following methods were used: induction, deduction, sublimation, synergetics, evolutionary historicism, modelling, and forecasting. **The result of the research.** Artificial Intelligence (AI) is a broad term used to define technologies/ engineering systems that emulate human intelligence, linking to neurophysiology, robotics, psychology (pattern recognition, modelling of psychological processes), transhumanism, cybernetics (computing power to find patterns in large data sets). Artificial Intelligence has been defined as a software-engineered system that is capable of influencing the environment with varying degrees of autonomy, producing results (predictions, recommendations, decisions) for a specific set of goals for the digitalisation of society. On the other hand, artificial intelligence causes many problems that are seen as cyber/virtual addiction, loss of reality, increased surveillance, loss of protocol control, privacy issues, cybersecurity, etc. The convergence of large data with artificial intelligence has become the single most important development shaping the future of social institutions in the digital society and the prospects for realising potential opportunities. Thanks to the latest digital technologies, advances in software engineering, and evolving artificial intelligence, there are both new perspectives for solving the most complex problems of modern civilization and new challenges in the technological, ontological, and anthropological dimensions.

Key words: artificial intelligence, augmented reality, digital society, anthropological and ontological dimensions.

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Urgency and problem statement

Artificial intelligence is a generalized concept characterized by the ability of a software-engineering system to process, use, and improve certain data/information/knowledge that mimics human intelligence. Very often artificial intelligence is associated with neurophysiology, robotics, computer science, psychology (pattern recognition, modelling of psychological processes), transhumanism, and cybernetics (computing power to find patterns in large data sets). An artificial intelligence system has been defined as an engineering system that, with varying degrees of autonomy, is capable of influencing the environment by producing results (predictions, recommendations or decisions) for a defined set of purposes. The use of data, autonomous decision-making processes and interaction with the environment, other software and engineering products and people are key characteristics of artificial intelligence, which is the technology industry that powers many of the applications we use every day (Andriukaitiene, Voronkova, Kyvliuk, Nikitenko, 2017).

Artificial Intelligence has several characteristics: firstly, it has the potential to be used in all sectors of the socio-economic sphere, from medicine to the arts; secondly, it has the inherent variability to solve problems of varying complexity at a minimal cost (Bostrom Nick, 2020); thirdly, it concerns the automation of human cognitive abilities from audiovisual perception to memory processes. Finally, it is disruptive because it is rapidly being incorporated into our daily lives. The combination of these aspects provides artificial intelligence with a powerful potential for social and economic influence, acting not only as a technology but also as a source of economic, political and cultural power. The cross-cutting nature of artificial intelligence and its social, economic, moral, legal and cultural implications call for an interdisciplinary approach that goes beyond a purely technological angle, as it addresses a wide range of topics: from criticality to creativity, from cybernetics to psychology, to microcosm. On the one hand, artificial intelligence offers many opportunities to support cognitive abilities aimed at analysing, modelling and predicting present and future events based on information/data. On the other hand, artificial intelligence causes many problems that are seen as cyber/virtual addiction, loss of reality, increased surveillance, loss of protocol control, privacy issues, cybersecurity, increased internet inequality, moral and legal issues, etc. (Kai-Fu Li, 2020).

To move away from copying current societal failures in addressing, for example, climate change or poverty, humanity must base the development of artificial intelligence on a critical analysis of the historical, economic, cultural and political structures that shape the experience of being human. This provides an opportunity to rethink what it means to be human in a world that is no longer anthropocentric, as we live in a wider ecosystem of people, machines and other artefacts in which we all interact. EU efforts to build robust artificial intelligence culminated in April 2021 with the publication of the Artificial Intelligence Act, a proposal for regulations setting harmonised rules for artificial intelligence. Instead of artificial intelligence methods per se, the proposal focuses on specific programmes and sets out different levels of risk to fundamental rights and security, ranging from unacceptable risk (prohibited actions) to minimal or no risk. For each level of risk, the proposal describes a proportionate set of requirements that an AI system must meet (Vance Ashlee, Elon Musk, 2018).

Artificial intelligence tools offer a number of new functions for business, management, law, education, etc. However, the use of artificial intelligence raises a number of moral issues. The algorithm of action of artificial intelligence depends on the depth of knowledge, information availability, openness, relevance, and accuracy of data underlying many perfect tools of artificial intelligence functioning. However, it is human beings who choose the data used to create artificial intelligence programs, the risk of human bias and subjectivity is an inherent factor and needs to be carefully controlled. Some experts in the industry believe that the term artificial intelligence is too closely associated with popular culture, futurological predictions and sometimes religious currents. The general public, therefore, has unrealistic fears about artificial intelligence. But there are also unrealistic expectations of how it will change the socio-economic systems of life and human ontology in general. Synthesis of research studies allows us to hope that the emergence of the term "augmented intelligence", which has a more neutral connotation, will help people understand that artificial intelligence will simply improve the standard of living. So, the formulation of the concept of artificial intelligence is evolving, transforming into a set of principles, factors, conditions, models, and mechanisms of interaction between humans, software-engineering systems (AI) and society (Voronkova, Nikitenko, 2022)..

Actual scientific researches and issues analysis.

In this article, we focus on the developments of scientists who have achieved great break-

throughs in the research of artificial intelligence as a complex social, economic, and cultural phenomenon: R. Andriukaitienė, N. Boström, A. Vance, P. Diamandis, S. Kotler, P. Dickson, L. Kai-Fu, and K. Kell, K. Kell, and others. Andriukaitene, N. Bostrom, E. Wens, P. Diamandis, S. Kotler, P. Dixon, L. Kai-Fu, C. Kelly, D. Rowan, C. Skinner, C. Steiner, M. Tegmark, K. Schwab. The article focuses on a number of conceptual publications on the development of artificial intelligence, its place and role in the digital society by V. Voronkova, V. Nikitenko, R. Oleksenko, Y. Kaganov, A. Dobrodum, A. Kyvliuk, V. Marienko, A. Cherep, G. Vasylchuk, E. Merzhynskyi, N. Metelenko and other scientists.

The research objectives: 1) to theorise artificial intelligence as a potential and resource for use in all sectors of the socio-economic sphere in the context of technological dimensions; 2) to clarify the convergence of artificial intelligence and its main components in the context of ontological dimensions; 3) to reveal the role of artificial intelligence in enhancing the digitalisation of society and humans in the context of anthropological dimensions.

Research methodology.

By analysing different methodological approaches, it is necessary to acknowledge the presence of an anthropogenic component, as the methodology of scientific research is based on the method of information-anthropogenic analysis based on the fundamental position that no artificial intelligence processes are possible without information/data as an object and human as a subject of cognition. Any exchange of matter, energy or information is conditioned by conscious human goals and interests, controlled and programmed by humans and based on information interaction and a component (Kelly Kevin, 2018).

The theory of artificial intelligence is a complex multidisciplinary science, which is located at the junction of economics, sociology, computer science, mathematics, psychology. Summarizing the processes of interdisciplinary interaction of artificial intelligence, we note that its study requires an interdisciplinary approach based on the synthesis of scientific knowledge, as revealing the content and principles of functioning of a complex invariant system of artificial intelligence. To analyze the modern model of artificial intelligence, it is necessary to apply a systematic institutional-evolutionary approach.

Alongside the principle of systemic, the general methodological basis should be provided by the civilisational approach, which involves considering the individual stages of civilisational development: agrarian (pre-industrial), industrial, post-industrial/information and anthropogenic society. The civilizational approach should be based not only on logical (considering a process or phenomenon at its point of development before the current time period) or historical (considering the genesis of an object) regularities but on integral aspects of the interaction between the historical development of theories and processes and their present state (Voronkova, Nikitenko, Andryukaitene, Oleksenko, 2021).

In studying the process of artificial intelligence, it is necessary to apply the method of sublimation, which allows identifying the content of the stages of transformation, giving them a comparative analysis. The process of constructing the logical structure of any theory should consist of two stages: the induction stage – ascending from the concrete to the concrete abstract, when the researcher identifies a central system-forming concept, a system of axiomatic requirements or a single research approach, and the deduction stages – ascending from the abstract to the concrete. The deductive method (the use of theoretical knowledge) is of great practical importance for artificial intelligence as well (Dobrodum, Kivliuk, 2018).

The deductive method should be complemented by an empirical approach, in which the underlying assumptions of artificial intelligence are adopted on the basis of analysis of reliable empirical data. By analysing different methodological approaches, it is necessary to acknowledge the presence of an anthropogenic component, as the methodology of scientific research is based on the method of information-anthropogenic analysis based on the fundamental position that no artificial intelligence processes are possible without information/data as an object and human as a subject of cognition. Any exchange of matter, energy or information is conditioned by conscious human goals and interests, controlled and programmed by humans and based on information interaction and a component.

The Agile method, as a synergistic method of adapting complex socio-economic systems that is based on self-organising processes, has played a major role (Nikitenko Vasylchuk, Merzhynskyi, 2022).

The statement of basic materials.

Artificial Intelligence as a Potential and Resource for Use in Different Sectors of the Social and Economic Sphere: Technological Dimensions

«At the beginning of the 21st century, it seems that informatization and virtualization, digitaliza-

tion, robotization, and computerization cover more and more spheres of human life — it is possible to record and state the actualization and accentuation of technologies, their kind of sacralization and deification» (Dobrodum O., Kyvliuk O., 2021, p. 87).

. Therefore, based on a critical analysis of the historical, cultural, praxeological, axiological, socio-institutional, physiological systems that form human existence when creating artificial intelligence, it is possible to understand the role and meaning of humans in a world that is no longer anthropocentric, as we live in a multidimensional ecosystem of people, machines and other interacting artefacts.

The anthropological foundations of artificial intelligence aim to rethink human existence in the context of its functioning, which allowed a change in the direction of society towards overcoming discrimination, inequality, aggression, injustice, etc. The collective efforts of both theoretical and practical scientists to create, operate and improve artificial intelligence must be based on knowledge/data from various scientific fields and specialities in order to identify the many possibilities, interdependencies, prospects, risks, and dangers and explore possible futures (Kivliuk, Mordows, 2018).

For each level of risk, the proposal is defined by a proportionate set of requirements to be met by the AI system. With regard to data, the European Strategy encourages the creation of several thematic data spaces in which civil society, the public and the commercial sector can exchange data, as well as a Data Management Act to facilitate the voluntary exchange of data by individuals and businesses, harmonising the conditions for using certain public sector data.

A new key initiative is a future data law that extends users' rights to access and share data created by the products or services they use and, together with other legislation covering digital services and the digital marketplace, prevents the abuse of a dominant position by "big players" in ways that harm citizens, businesses and consumers. This combination of legal instruments sets boundaries for the development of artificial intelligence technologies in a way that supports the values that are the foundation of the European Union, namely respect for human dignity, freedom, democracy, equality, the rule of law and respect for human rights, which are the ontological foundations of human existence (Marienko, 2021).

"In the modern world, issues related to transhumanism, robotics, e-government and Silicon Valley projects in many countries of the globe (work in the European Parliament, taxation of robots, etc.) are becoming relevant. It remains axiomatic that high technology contributes to the revolutionisation of social life, the reformatting of society, the emergence of a smart society, the redistribution of values. Virtualisation acts as an anthropological revolution in the life of modern society: there is a doubling of social reality, the sacralisation of cyberspace, the transition of virtual reality into another format of human life (cyborgisation, robotisation, chipisation), and in this context, the appearance of the transhuman and the solemnity of artificial intelligence as a combination of ideas and technology are debated (Dobrodum, Kivliuk, 2018).

Some scientists and civil society organisations have questioned whether artificial intelligence will be used as a panacea, or as a variable component, or as a system technology if necessary, perhaps becoming more effective than humans for certain processes, but its prevalence, relevance, researchability, popularity is not in doubt. For example, machine learning (ML), which evolved from the study of pattern recognition theory and computational learning in artificial intelligence, explores the construction of algorithms that can learn and make predictions based on data. Such algorithms progress by following strictly static software instructions, making predictions or data-driven decisions by building a model from samples of input data. Machine learning is used in a number of computational tasks where explicit algorithms cannot be developed and programmed. Machine learning allows a computer to collect data and learn from it to generate ideas (Voronkova, Nikytenko, Andryukaitene, Oleksenko, 2021).

Alongside machine learning, we should not forget areas of artificial intelligence such as natural language processing (NLP), which deals with the interaction between computers and human (natural) languages, and in particular deals with programming computers to process natural languages efficiently (neural networks: connective units designed to learn and recognise patterns, similar to the human brain) [20]; robotics, which deals with the design, construction, operation and use of robots as well as computer systems for their control, sensory feedback and information processing (Oltrade, Dagogo, 2021); software that is capable of mimicking intelligent human behaviour by learning data patterns and analysing information (from chatbots to deep learning and machine learning software with cognitive computing capabilities (Rowan David, 2021).

Artificial Intelligence (AI) is the modelling of human intelligence processes by machines, i.e.

engineering systems that include the following processes: learning – obtaining information and rules for its use; reasoning – using rules to draw approximate or final conclusions; self-correction – separate applications of AI include narrow artificial intelligence, face recognition and 'computer vision'.

Modern Artificial Intelligence capabilities make it possible to analyse more data in more depth with neural networks that have many hidden layers. A few years ago, it was almost impossible to create a fraud detection system with five hidden layers. This has changed through the increased power of the latest technology and the emergence of vast amounts of data. Indeed, large amounts of data are required to train deep learning models, as they are the ones that learn directly. Thus, the GDPR (General Data Protection Regulation) imposes strict limits on how companies can use consumer data (Oltrade Dagogo, 2021).

Convergence of big data with artificial intelligence and its main components: ontological dimensions

The convergence of big data with artificial intelligence has become a major development shaping the future of various institutions, businesses, and agencies that are reaping dividends from the array of information-analytical data. The concepts of 'artificial intelligence' and 'machine learning' are now used as interrelated, even though artificial intelligence and machine learning are not exactly the same thing, but the notion of it can sometimes lead to some confusion. Artificial Intelligence is intelligence exhibited by machines, applied when a machine mimics 'cognitive' functions that humans associate with the minds of others, such as 'learning' and 'problem-solving'. Machine learning is a class of algorithms that automate the construction of an analytical model that allows computers to learn without explicit programming (Gupta, Sunil, 2020).

Thanks to new emerging technologies such as automation, the internet, virtual and augmented reality, artificial intelligence and 5G connectivity, almost all industries and economic activities (construction, engineering, utilities, automotive industry, state and local government, etc.) have new opportunities to tackle their complex future-oriented challenges. For these reasons, Oracle Industry Lab has been opened outside of Chicago as an incubator and testing ground where potential customers and partners can explore 5G and other transformational technologies. Communication service providers (CSPs) are investing billions of dollars in 5G and fibre optic networks to generate new revenue streams in the corporate market [8]. The capabilities of 5G make it possible to quickly and easily acquire the vast amounts of data needed to create a digital city. A remote Spot resource provides a view of the latest environmental measurements, facilitating intelligent workflows. Oracle Communications and Oracle Construction & Engineering technologies improve remote operations through the intelligent, secure, direct, accurate exchange of digital information, etc., to represent the energy efficiency and reliability of their use in the real world (Diamandis, Peter & Kotler, Steven, 2021).

By using machine learning to provide useful information, CSPs can proactively detect problems as soon as they arise. Closed-loop automation can enable providers to guarantee the reliable quality of service on their network, ensuring full access for both customers and their employees. Fibre optic networks can be a differentiated service, but they need to be constantly monitored for failures to prevent or reduce customer frustration.

Communication is key to enabling billions of people to work, communicate, shop and have fun in a digital world. Through lab-driven ecosystem thinking, the communications industry can and will help service providers and other technology companies explore and test use cases that will accelerate new revenue opportunities with 5G support. The terms "anthropogenesis" and "technogenesis" are two aspects of the same phenomenon (here is the deepest meaning of symbiosis), and in digital technogenesis the very essence, informative and electric, pulsates even closer and feels the interference between the two functions (Nikitenko, Vasylchuk, 2022).

Real-world ontologies internally realised by artificial intelligence paradigms: Good-Old-Fashioned Artificial Intelligence (GOFAI); machine learning (ML) systems; artificial neural networks (ANN); situational, SED systems, disconnected from the world because of the ontological gap. In other words, the way these systems internally represent the external world is not at all the same as the way the world is. Artificial Intelligence systems (using any of these paradigms) do not relate to reality in the same way that humans do, so they do not construct an ontology of the inner world as well as an ontology of reality (Kai-Fu Li, 2020).

A URI or Uniform Resource Identifier is used to uniquely identify a resource. A resource can be anything that has a unique identity; it is a string that refers to a resource, which can contain a person, a web page or a company using web address syntax. It has wide application in artificial intelligence because it helps

improve the quality of data for training datasets. This provides more coherent and easier navigation when users want to navigate from one concept to another in the ontology structure. In addition, ontologies can be used to create a knowledge graph for a set of individual facts. Knowledge can be described as a set of entities in which nodes and boundaries between nodes explain the type and relationship between them (Kelly Kevin, 2018).

The use of ontologies using Web Ontology Language (OWL) has recently been noticed. A domain-specific ontology is a combination of artificial intelligence-based data analysis tools that can serve relevant data and identify new data trends and patterns. This means that the ontology can be adapted to the goals of each organisation using logical, semantic or mathematical approaches.

We can state that the application of the biosemiotic perspective plays a crucial role in enabling autonomous ontologies in synthetic agents. This is the basis for realizing the ability to formulate subjective judgements in synthetic agents. We have developed artificial intelligence systems that exceed human capabilities, but only for specific, narrowly defined tasks. Even if these possibilities seem very impressive, this is not what we are looking for. The conceptual criterion requires that the proposed solutions close the conceptual gap, including the ontological gap between cognitive science and artificial intelligence technologies (Dixon, Patrick, 2021).

Artificial Intelligence and Their Role in Enhancing Human and Social Digitalisation: Anthropological Dimensions

Human consciousness creates an internal ontology. Conceptualisations of the external ontology are more or less accurate, as this is a prerequisite for safe communication with reality. This means that we take responsibility for the ontology we create. We can distinguish between our representation and the external world and recognise the difference between them and what that means for us. In other words, we are aware, in principle, of the ontological gap. However, in the case of artificial systems, we are faced with a very specific distinction – the disconnect between the ontologies of the artificial agent and the human agent. In this perspective, the subject's corporeal/physical involvement with reality allows him/her to identify (and single out) meaningful parts of reality (Diamandis Peter & Kotler Stevens, 2021).

" The fact that the worldwide web with its possibilities creates such a conditionally-symbolic environment, which radically transforms space and time, became dimensions of human existence, has been proved. And here the most indicative form of this environment is the virtual reality created on the basis of modern information-computer and electronic-digital technologies. There is a perception that human beings initially exist in parallel in several temporal and spatial forms of being, which are only real in the imagination of the individual. It is not a question of psychological pathologies, be they futurological teachings, but the real existence of the individual: personal or collective planning for both near and distant futures, behavioural skills and reactions, forms of collective consciousness, religious motives, intellectual, cultural, creative potential, etc. Immersion in virtual reality, the transition from one virtual state to another has always been and remains the prerogative of the human mind. But with the emergence of technical capabilities and understanding of the role of virtual reality in human life, the full-scale domination of information, telecommunications, and electronic and digital technologies began. It was the needs and pace of development of the digital society that led to the assertion of virtual reality and virtual culture as a socially significant phenomenon"(Kivliuk, Mordows, 2018, p, 24-25).

In intelligent interaction, the computer understands the meaning of the user's message and the context of the message. As an example, human interaction is usually done through language and body gestures. If we want to have truly intuitive communication, computers will need their own vision and language to fit naturally into the human world. Machine learning is a subsphere of artificial intelligence, allowing computers to learn without simple programming. Among the many driving forces behind the rapid growth of the technology ecosystem, artificial intelligence and its subdomains are at the forefront. Gartner – this is the application of "advanced analysis and logical methods" for modelling human intelligence, which is a complex system with multiple use cases for individuals and businesses in a variety of industries. There are numerous ways of using artificial intelligence to support, automate and extend human tasks, as evidenced by a number of proven practices and grounded theories (Skinner, Chris, 2020).

Therefore, artificial intelligence can be grouped into broad functional categories, in particular:

1. Automate processes. This is the thing that makes a system or process work automatically. For example, RPA (Robotic Process Automation) can be programmed to perform repetitive tasks faster than humans. The function of automating AI applications

corresponds to the main goal of artificial intelligence – to minimise human intervention in performing tasks, whether they are routine and repetitive or complex and complicated. By collecting and interpreting the volumes coming to it, artificial intelligence solutions can be used to determine the next steps in a process and execute it smoothly (Steiner, Christopher, 2018).

2. Data analysis and interpretation. The main function of AI solutions, especially for enterprises, is to create knowledge bases of structured and unstructured data and then analyse and interpret such data before making predictions and recommendations based on the results. This is called AI analytics, and it uses machine learning to learn from data and draw patterns. Whether the analytical tools are predictive, directive, augmented or even descriptive, AI is at the heart of determining how data is prepared, discovering new insights and patterns and predicting outcomes (Tegmark, Max, 2019).

3. Personalisation and user acquisition. Relationship building has become the holy grail of customer engagement and retention. AI adds intelligence to existing products. In most cases, it is not marketed as an app in itself. On the other hand, the products you already use will be enhanced with AI features, just as Siri – a feature added to the next generation of Apple products.

Automation, conversational platforms, bots and intelligent machines with big data can be combined to improve various technologies in private and professional domains, ranging from security to financial investment analysis. AI is adaptable through advanced learning algorithms and data-driven programming. AI identifies structure and patterns in data; in this way, the algorithm acquires skills: it becomes a classification or prediction algorithm. Just as it can learn to play chess on its own, it can decide on its own which product to recommend online. And models adapt in the presence of new data. Backpropagation is an artificial intelligence technique that allows models to self-adapt by learning and adding data when the first answer is not quite right (Dobrodum, Kyvliuk, 2021).

AI can be classified as either weak or strong. Weak AI, or narrow AI, is an artificial intelligence system designed and trained to perform a specific task. In this way, virtual personal assistants such as Apple's Siri are a weak form of AI. As for strong artificial intelligence, it has human cognitive abilities. If an unknown task is set, a good artificial intelligence system is able to find a solution without human intervention. The hardware, software and personnel costs for artificial intelligence can be high (Dixon, Patrick, 2021).

This is how many providers include AI components in their standard offerings, as well as access to AIaaS (Artificial Intelligence as a Service) platforms. AIaaS allows individuals and companies to experiment with artificial intelligence and test multiple platforms before getting started. The most popular AI cloud offerings include Amazon AI services, IBM Watson Assistant, Microsoft Cognitive Services and Google AI services.

4. Advanced intelligence for the general public. Artificial intelligence tools offer a range of new functions for the business. However, the use of AI raises ethical questions. Indeed, deep learning algorithms underpin many of the most advanced AI tools. However, their intelligence depends on the data provided to them during training. As humans select the data used to train an AI programme, the risk of human bias is inherent and must be carefully managed.

Some industry experts believe that the term 'artificial intelligence' is too closely associated with popular culture. The general public, therefore, has unrealistic fears about AI. But there are also unlikely expectations of how it will change the workplace and life in general. Consequently, researchers and marketers hope that the name 'augmented intelligence', which has a more neutral connotation, will help people understand that artificial intelligence will simply improve products and services. But above all, it will not replace the people who use them (Schwab, Klaus, 2019).

In summary, artificial intelligence has made its way into a number of areas. In particular, healthcare – is used for better and faster diagnostics; business – machine learning integrates analytics and customer relationship management (CRM) platforms to improve customer service; education – automating assessment and knowledge validation; finance – personal data collection and advice; manufacturing is an area that has been at the forefront of integrating robots into the workflow; the drone concept addresses safety and ethics issues, etc. On the other hand, the existence of hackers using sophisticated artificial intelligence tools to access sensitive systems should not be taken out of the equation, which consequently raises security issues. Therefore, on the whole, artificial intelligence has played a major role as a growth factor in the ecosystem in the context of technological, ontological, and anthropological dimensions.

Conclusions

Artificial Intelligence (AI) is a broad term used to define technologies/engineering systems that emu-

late human intelligence, linking to neurophysiology, robotics, psychology (pattern recognition, modelling of psychological processes), transhumanism, cybernetics (computing power to find patterns in large data sets). Artificial Intelligence has been defined as a software-engineered system that is capable of influencing the environment with varying degrees of autonomy, producing results (predictions, recommendations, decisions) for a specific set of goals for the digitalisation of society. On the other hand, artificial intelligence causes many problems that are seen as cyber/virtual addiction, loss of reality, increased surveillance, loss of protocol control, privacy issues, cybersecurity, etc. The convergence of large data with artificial intelligence has become the single most important development shaping the future of social institutions in the digital society and the prospects for realising potential opportunities. Thanks to the latest digital technologies, advances in software engineering, and evolving artificial intelligence, there are both new perspectives for solving the most complex problems of modern civilization and new challenges in the technological, ontological, and anthropological dimensions.

References

Andriukaitiene, Regina, Voronkova, V. H., Kyvliuk, O. P., & Nikitenko, V. O. (2017). Formation and development of smart society as high-minded, high-tech *and high-intelligent community. Humanities Bulletin of Zaporizhzhe State Engineering Academy*. 71. 17-25.

Bostrom, Nick (2020). Superintelligence: Paths, Dangers, Strategies / translated from English Anton Yashchuk, Antonina Yashchuk. Kyiv : *Nash Format*. 408.

Vance, Ashlee, & Elon, Musk (2018). Tesla SpaceX, and the Quest for a Fantastic Future / Trans. from English Myroslava Lizina. Eighth edition. Kyiv : *PE Forostina O.V*. 428.

Voronkova, V. H., & Nikitenko, V. O. (2022). Philosophy of the digital man and the digital society: theory and practice: monograph. Lviv-Torun : *Liha-Press.* 460. Access mode: http://catalog.liha-pres.eu/index.php/liha-pres/catalog/book/148

Valentina, Voronkova, Vitalina, Nikytenko, Regina, Andryukaitene, & Roman, Oleksenko (2021). Artificial Intelligence as a major decisive force that can change humanity. *Quarterly German Scientific/Scientific Popularity Bulletin "Scientific Results"; Sociology, Criminology, Philosophy, Political Science.* 2. №6. 32-37. https://sci-result.de/journal/issue/view/6/6 https://sciresult.de/journal/issue/view/5/5%20(Verlag)%20(kostenfrei%20zug%C3%A4nglich

Voronkova, V., Kyvliuk, O., Nikitenko, V., & Oleksenko, R. (2018). "Stem-education" as a factor in the development of "smart-society" : forming of "stem-competence". *Humanitarian Bulletin of the Zaporizhzhya State Engineering Academy: collection of scientific works.* / Chief editor V.G. Voronkova. Zaporizhzhia : *ZDIA*. 72. 114-124.

Gupta, Sunil (2020). Driving Digital Strategy: A Guide to Reimagining Your Business / translated from English by I. Kovalyshena. Kyiv : *KM-BOOKS Publishing House.* 320.

Diamandis, Peter & Kotler, Steven (2021). The future is closer than it seems. How technology is changing business, industry and our lives / translated from English by Dmytro Kozhedub. Kyiv: *Laboratory*. 320.

Dixon, Patrick (2021). The Future of (Almost) Everything. How the world will change over the next hundred years / translated from English by I. Voznyak. Kharkiv : *Vivat*. 432.

Dobrodum, O., Kyvliuk, O. (2021). Transhumanism and Posthumanism: Reflection of the Human Civilization Future. *Philosophy and Cosmology.* 26. 77-89. DOI: https://doi.org/10.29202/phil-cosm/26/6.

Dobrodum, O. V., & Kivliuk, O. P. (2018). Technological miracle of modern India: on the way to artificial intelligence and smart society. *Interdisciplinary studies of complex systems : [collection of scientific papers].* 12. Kyiv : Drahomanov National Pedagogical University. 79-91.

Kai-Fu, Li (2020). Artificial Intelligence Superpowers. China, Silicon Valley and the New World Order / translated from English by Vyacheslav Punko. Kyiv : *Force Ukraine*. 303.

Kelly, Kevin (2018). Unstoppable. 12 technologies shaping our future / translated from English by Natalia Valevska. Kyiv : *Nash format.* 304.

Kivliuk, O. P. & Mordows, I. O. (2018). Game as a phenomenon of philosophical anthropology in the context of virtualization of social relations. *Educational discourse: a collection of scientific papers* / Ed. O. P. Kivliuk. Kyiv: Gilea Publishing House. 7. 17-26.

Marienko, V. (2021). Information and communication technologies as a factor in improving the efficiency of the organization's innovation potential. *Humanity Studies.* 9 (86). 154-167. http://humstudies.com.ua/article/view/252012/249406.

Nikitenko, V. O., Vasylchuk, G. M., & Merzhynskyi, E. K. (2022). The network economy as a factor in increasing the efficiency of digitalization in the context of the development of the digital society from 1G to 5G. *Humanities studies: Collection of Scientific Papers. Zaporizhzhia: Publishing house "Helvetica"*. 10(87). 112-121. http://humstudies.com.ua/

article/view/254715.

Nikitenko, V. O., & Vasylchuk, G. M. (2022). The model of a *digital city as a factor of creative development.* Humanities studies: a collection of scientific papers. Zaporizhzhia: Helvetica Publishing House. 11 (88). 48-58. http://humstudies.com.ua/article/view/261864/258256.

Oltrade, Dagogo (2021). New thinking. From Einstein to Artificial Intelligence: Science and Technology that Changed the World. Kharkiv: Vivat. 368.

Rowan, David (2021). Non-Bullshit Innovation. Radical ideas from the world's most powerful radicals / translated from English by Natalia Paliy. Dnipro: "Balance Business Books. 464.

Skinner, Chris (2020). The Digital Man. The fourth revolution in human history that will affect everyone. Kharkiv: Ranok Publishing House: Fabula. 272.

Steiner, Christopher (2018). Total automation. How computer algorithms change life / translated from English by Oleksandr Lototskyi. Kyiv: Nash format. 280.

Tegmark, Max (2019). Life 3.0 The Age of Artificial Intelligence / translated from English by Zoryna Korablina. Kyiv: Nash format. 432.

Schwab, Klaus (2019). The Fourth Industrial Revolution, Shaping the Fourth Industrial Revolution. Kharkiv: Family Leisure Club. 426.

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ФІЛОСОФСЬКА РЕФЛЕКСІЯ ПРО ШТУЧНИЙ ІНТЕЛЕКТ ТА ЙОГО ВПЛИВ НА РОЗВИТОК СУСПІЛЬСТВА, ЛЮДИНИ ТА ОСВІТИ

Анотація

Актуальність досліджень штучного інтелекту в цифровому суспільстві представляє численні причинно-наслідкові зміни, серед яких: космічні дослідження, біотехнології, нанотехнології, цифрові технології тощо. Наслідки для людей і людської цивілізації є значними, оскільки вони впливають на вирішення низки сучасних проблем економіки, політики, етики, права, психології, конфліктології, соціології та екології. Антропологія має повернутися до існування людей у суспільстві штучного інтелекту, свідомості та навіть фізичного тіла. Дослідження концептуалізує штучний інтелект як фактор росту екосистеми в контексті технологічного, онтологічного та антропологічного вимірів. **Цілі дослідження:** 1) концептуалізувати штучний інтелект як потенціал і ресурс для використання в усіх секторах соціально-економічної сфери в контексті технологічних вимірів; 2) з'ясувати конвергенцію штучного інтелекту та його основних компонентів у контексті онтологічних вимірів; 3) розкрити роль штучного інтелекту в посиленні цифровізації суспільства та людини в контексті антропологічних вимірів. У дослідженні ми керуємось працями вчених, які вивчають проблеми штучного інтелекту як складного соціального, економічного та культурного феномену: Р. Андрюкайтене, Н. Бостром, А. Венс, П. Діамандіс, С. Котлер, П. Діксон, Л. Кай-Фу, К. Келл. **Методологія** дослідження. Теорія штучного інтелекту є комплексною мультидисциплінарною наукою, яка знаходиться на межі економіки, соціології, інформатики, математики, психології. Узагальнюючи процеси міждисциплінарної взаємодії штучного інтелекту, зазначимо, що його дослідження потребує міждисциплінарного підходу на основі синтезу наукових знань, як розкриття змісту та принципів функціонування складної інваріантної системи штучного інтелекту. Для аналізу сучасної моделі штучного інтелекту необхідно застосувати системний інституційно-еволюційний підхід. Аналізуючи різні методологічні підходи, необхідно визнати наявність антропогенної складової, оскільки методологія наукових досліджень ґрунтується на методі інформаційно-антропогенного аналізу, який базується на принциповому положенні про те, що без інформації/даних неможливі процеси штучного інтелекту. як об'єкт і людину як суб'єкт пізнання. Крім того, використовувалися такі методи: індукції, дедукції, сублімації, синергетики, еволюційного історизму, моделювання, прогнозування. Результат дослідження. Штучний інтелект (AI) – це широкий термін, який використовується для визначення технологій/інженерних систем, які імітують людський інтелект, пов'язуючи його з нейрофізіологією, робототехнікою, психологією (розпізнавання образів, моделювання психологічних процесів), трансгуманізмом, кібернетикою (обчислювальна потужність для пошуку закономірностей у великих даних). набори). Штучний інтелект визначається як розроблена програмним забезпеченням система, яка здатна впливати на навколишнє середовище з різним ступенем автономності, виробляючи результати (прогнози, рекомендації, рішення) для певного набору цілей для цифровізації суспільства. З іншого боку, штучний інтелект створює багато проблем, які розглядаються як кібер/віртуальна залежність, втрата реальності, посилене спостереження, втрата контролю протоколів, проблеми конфіденційності, кібербезпека тощо. Конвергенція великих даних із штучним інтелектом стала єдиною найважливіший розвиток, що формує майбутнє соціальних інститутів у цифровому суспільстві та перспективи реалізації потенційних можливостей. Завдяки новітнім цифровим технологіям, прогресу програмної інженерії та штучному інтелекту, що розвивається, з'являються як нові перспективи для вирішення найскладніших проблем сучасної цивілізації, так і нові виклики в технологічному, онтологічному та антропологічному вимірах.

Ключові слова: штучний інтелект, доповнена реальність, цифрове суспільство, антропологічний та онтологічний виміри.

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