

Brief information about the project

Name of the project	AP14870416 “Development of new approaches to solving philosophical problems of many-valued logic as a means of establishing patterns of thinking”
Relevance	<p>One of the central problems in research related to the development of artificial intelligence systems is the lack of an adequate understanding of the essence of intelligence as such. It is for this reason that all discussions on the topic of which systems can be classified as artificial intelligence, and which cannot are obviously pointless.</p> <p>Within the framework of this project, it is planned to implement a set of studies aimed at proving that to comprehend the essence of intelligence it is necessary to return to the consideration of logic as a science that ensures, among other things, the establishment of the laws of thinking. Considering the fact that real human thinking cannot be reduced to the simplest form of logic - binary, the tool for this is multi-valued logic.</p> <p>Within the framework of this project, based on previously obtained interdisciplinary results, it will be proven that thinking is a form of existence of intelligence in the same sense in which movement is a form of existence of matter. On this basis, it will also be shown that there are objective laws of thinking, described in terms of multi-valued logics, and independent of the specific form of physical implementation of intelligence.</p> <p>We emphasize that within the framework of this project, the philosophical approach performs one of its basic functions, closely related to the idea of philosophy as a science of sciences - providing a methodological basis for interdisciplinary cooperation based on new philosophical ideas about information processing systems and the essence of multivalued logic.</p>
Purpose	The goal of the project is to create and implement a new synergetic philosophical approach to establishing objective laws of thinking based on a new approach to the philosophical interpretation of multi-valued logics and to ensure the possibility of using it to create a new type of artificial intelligence systems.
Objectives	<ul style="list-style-type: none">- justify the need to develop a new philosophical approach to the interpretation of the essence of multi-valued logic;- justify the need to consider multi-valued logics from the point of view of establishing objective laws of thinking;- show that the variability of multi-valued logics can be considered as a reflection of the objective laws of thinking inherent in any form of intelligence;- develop in detail the hierarchy of information objects, the highest levels of which are occupied by various forms of intelligence, and also demonstrate the connection of this hierarchy with multi-valued;- show that the operational basis for the functioning of any form of intelligence does not depend on the form of its physical embodiment and is subject to the laws of self-organization of information nature;

	<ul style="list-style-type: none"> - show that objectively existing laws of thinking, expressed through the tools of logic, de facto represent the forms of existence of any form of intelligence; - to develop an apparatus that is a generalization of the apparatus of dialectical categories, allowing for a consistent interpretation of the variables of multivalued logic as generalized forms of philosophical categories; - show that the developed apparatus of dialectical categories is applicable to the description of a system of undefined concepts that form the basis, including natural languages; - show that human intelligence is an evolving system, and the nature of this evolution is subject to the objective laws of the evolution of information objects; - perform computer experiments that prove the adequacy of the proposed approach on demonstration models that reflect the nature of the functioning of natural languages as a form of implementation of multi-valued logics.
<p>Expected and achieved results</p>	<p>As a result of the project, a new synergetic philosophical approach to establishing objective laws of thinking will be created and implemented based on a new approach to the philosophical interpretation of multi-valued logics and the possibility of using it to create a new type of artificial intelligence systems with proof of constructively on a demonstration model will be provided.</p>
<p>Research team members with their identifiers (Scopus Author ID, Researcher ID, ORCID, if available) and links to relevant profiles.</p>	<ol style="list-style-type: none"> 1. Massalimova Aliya Rmgazinovna – Doctor of Philosophy, Scopus H-Index – 3, Researcher ID ABE-2310-2022, ORCID-0000-0002-5527-7491, Scopus Author ID – 56610257900. 2. Suleimenov Ibragim Esenovich – Doctor of Chemical Sciences, Candidate of Physical and Mathematical Sciences, Scopus H-index – 15, Researcher ID ABF-4192-2020, ORCID 0000-0002-7274-029X, Scopus Author ID 55975678200. 3. Ermukhambetova Bayana Bisenalievna – Scopus H-index – 6, Web Of Science H-index – 6, ORCID 0000-0003-4950-0367, Scopus Author ID: 7801355509, 6507458589. 4. Vitulyova Yelizaveta Sergeevna – PhD candidate, Scopus H-index – 8, Researcher ID AAO-4550-2020, ORCID 0000-0002-6075-4870, Scopus Author ID 57211658771. 5. Matrassulova Dinara Kutlimuratovna – Scopus H-index – 2, ORCID 0000-0002-0646-6333, Scopus Author ID 57215663839. 6. Alikulov Adilet Zhenisbekuly – Scopus H-index – 2, Scopus Author ID: 57208745138, ORCID 0000-0003-0380-0612. 7. Bakirov Akhat Serikuly – Scopus H-index – 11, ResearcherID ABB-7007-2020, Scopus Author ID 57205197104, ORCID 0000-0002-2563-307X.

<p>List of publications with links to them</p>	<p>Scopus:</p> <p>1. Suleimenov, IE, Gabrielyan, OA, Bakirov, AS Neural network approach to the interpretation of ancient Chinese geomancy feng shui practices. European Journal of Science and Theology, 2023, 19(2), 39-51. http://www.ejst.tuiasi.ro/Files/99/4_Suleimenov%20et%20al.pdf</p> <p>Committee for Quality Assurance in the Field of Science and Higher Education of the Ministry of Science and Higher Education of the Republic of Kazakhstan:</p> <p>1. Suleimenov I.E., Gabrielyan O.A., Massalimova A.R., Shaltikova D.B., Vitulyova E.S., Matrassulova D.K. The question of the existence of the “mental body” from the point of view of philosophical problems. Bulletin of KazNU. Series of philosophy, cultural studies and political science, 2023. No. 3 (85). 4-14 DOI:10.26577/10.26577/jpcp.2023.v.85.i3.01</p> <p>Monograph:</p> <p>1. Massalimova A.R., Vitulyova E.S., Matrassulova D.K., Suleimenov I.E. Renaissance of Eastern philosophy and modern problems of the philosophy of many-valued logic. Almaty: PrintExpress - Publishing and printing, 2023. – 210 p.</p> <p>Conferences:</p> <p>1. Suleimenov I. E., Gabrielyan O. A. Neural network analysis of trends in the development of the world economy: thesis on currency zones // Economics of sustainable development of the region: innovations, financial aspects, technological drivers of development in the field of tourism and hospitality. – 2023. – P. 12-21.</p> <p>2. Suleimenov I.E. On the question of philosophical problems of the foundations of discrete mathematics // Collection of proceedings of the international scientific-theoretical conference “Kazakhstan school of dialectical logic: history and modernity”. – 2023. – P. 300-308.</p>
<p>Patent</p>	<p>-</p>