

**International Scientific Conference on Mathematical Logic
and Computer Science,
Eurasian National University,
Kazakhstan, Astana,
October 7-8, 2022**

This conference was held at our university to introduce and discuss the current state of science, the mutual influence of mathematical logic and computer science, and modern trends and problems.

The problems and results discussed at this forum are a continuation of the work of the six conferences "Kazakh-French Colloquium on Model Theory" and "French-Kazakh Colloquium on Model Theory" in different years, as well as the work of the "Sixteenth Asian Logical Conference" in 2019.

The Asian Conference on Logic (ACL) was a major international event in mathematical logic. It presented the latest scientific developments in the field of mathematical logic and its applications, logic in computer science and philosophical logic.



This conference on mathematical logic and computer science reflects the huge impact of the achievements of mathematical logic on sections of computer science such as artificial intelligence, expert systems and others, is aimed at promoting mathematical logic and computer science in the Eurasian space, in particular in Kazakhstan, and bringing together scientists for the exchange information and ideas.

At Eurasian National University of L.N. Gumilyov, which was recently awarded the title of a research university, research in mathematical logic and algebra is carried out at the department of "Algebra and Geometry" of the Faculty of Mechanics and Mathematics, where the students of the academician of the National Academy of Sciences of the Republic of Kazakhstan Umirbaev Ualbay, the academician of the Academy of Sciences of the Kazakh SSR Taimanov Asan Dabsovich, as well as other representatives of the Siberian School of Algebra and Logic work .

The Faculty of Information Technology of the ENU trains competent scientists in the specialties declared at the conference, but it is necessary to strengthen the training of specialists in modern areas of information technology such as DATA Science, artificial intelligence, computer linguistics, information security, information systems and software engineering.



A pool of three reports on semantic and logical programming was presented at the conference. The conference was opened with the theoretical foundations of this science, which are based on the achievements of mathematical logic - a joint report "Logico-mathematical description of polynomial computability" by Academician S.S. Goncharov and Dr. Sci. Sviridenko (Institute of Mathematics SB RAS) and continued with reports on the implementation of these ideas in the form of information products - the report "Ontological Data Mining" by Dr. Sci. Vityaev E.E. (Institute of Mathematics SB RAS) and the report "Ontologies and Microservice Object-Oriented Programming" by Dr. Sci. Mantsivody A.V. (Irkutsk State University)). These reports aroused great interest and impressed the conference participants with their fundamental nature, wide scope and

implementation in real areas of life such as computer science, economics, medicine, etc.

In the direction of mathematical logic, algebra and number theory, a review by S.A. Badaev on "Rogers Semilattices" (Kazakh-British Technical University, Almaty), the solution of an actual problem of the theory of rings by Academician of the National Academy of Sciences of the Republic of Kazakhstan U. Umirbaev (Wayne University, USA) were presented. The report "On Small Models in Jonsson Theory" was made by Eshkeev A.R. (Karaganda State University). Gabbasov M.B. (Company for system research "FACTOR", Astana, Kazakhstan) presented the report "On one estimate of prime numbers. Also, a number of reports of scientists from Kazakhstan such as I.V. Latkin, M. Bekenov, N. Markhabatov and others were offered.



The solution to the urgent problems of social, medical support for residents of the UK based on innovative technologies was given in the report "Health and Social Care Assistive Technologies Innovation" by Professor Salah Al-Majeed of the School of Computer Science at Lincoln University in the UK.

On the problems of information security, the report "Analysis of energy depletion attacks in the Internet of Things" by Professor Desnitsky V.A. was proposed. (St. Petersburg Federal Research Center of the Russian Academy of Sciences, RF).

Reviews of a cycle of works on information systems based on mathematical logic and information technologies of scientists from Novosibirsk and the Eurasian National University and computational linguistics of scientists from the Institute of Informatics Problems of the Siberian Branch of the Russian Academy of Sciences, ENU named after Gumilyov and the Institute of Computing and Information Technologies of the Ministry of Education and Science of the Republic of Kazakhstan were proposed by Sambetbayeva M.A. in the report "Thesauri and ontologies in scientific and educational information systems" and Sagnaeva S.K. in the report "Models and methods of semantic analysis and representation of the meaning of text in computational linguistics".

Modern problems of information technologies in the field of energy consumption by computing devices and software of various information systems and technologies were presented in the report "Energy of computing: Optimization of software applications for energy and performance" by Professor A.L. Lastovetsky from the School of Computer Science and Informatics of UKD, Dublin, Ireland. This report reflected the problems related to the energy and economy of various countries, and raises a particularly topical issue of building nuclear power plants on the territory of the Republic of Kazakhstan.



Dozens of scientists from various countries took part in the conference and more than a hundred articles and abstracts were sent.

In general, the work of the conference was organized at a high level, the works of famous scientists from different countries were presented, as well as the works of young domestic scientists, which are aimed at solving urgent problems, are carried out in accordance with modern requirements for scientific research.

The international conference "Mathematical Logic and Computer Science" was financially supported by the grant of the Ministry of Education and Science of the Republic of Kazakhstan AR08855497 "Model-theoretic and algorithmic properties of algebraic systems".

Chairman of the Organizing Committee

Doctor of Physical and Mathematical Sciences, Professor Tusupov D.A.