

## Vladimir Serebryakov



12.05.1946 – 20.12.2024

A talented person, mathematician, renowned specialist in the field of system programming, theory and practice of developing compilers, semantic digital libraries and data integration, Doctor of Physical and Mathematical Sciences, professor Vladimir Serebryakov has passed away.

Vladimir Serebryakov's scientific and pedagogical life has always been connected with leading Russian universities and academic institutes. He graduated from the Faculty of Electronics and Computer Engineering of the Moscow Forestry Institute (branch of Bauman Moscow State Technical University) in 1969. He worked there until 1972, when he entered full-time graduate school at the Computer Center of the USSR Academy of Sciences. In 1970, he entered the evening department of the Mechanics and Mathematics Faculty of the Lomonosov Moscow State University (engineering stream), and graduated in 1974. After completing his postgraduate studies in 1975, he was hired by the Dorodnicyn Computing Centre of the Russian Academy of Sciences (now the Federal Research Center "Computer Science and Control" of RAS) and in 1976 he defended his PhD thesis there.

Vladimir Serebryakov earned scientific and administrative ranks at the Computing Center, became a doctor of physical and mathematical sciences, professor, head of many projects and research teams, and worked there until the last days of his life.

Vladimir Serebryakov extensively lectured at the Lomonosov Moscow State University and at the Faculty of Control and Applied Mathematics of the Moscow Institute of Physics and Technology. He trained many students who defended their theses for the titles of candidates of physical, mathematical and technical sciences. He published himself and together with colleagues about 200 works, monographs and textbooks.

In 1991, Vladimir Serebryakov headed the Department of Mathematical Support Systems, one of the leading divisions of the Dorodnicyn Computing Centre. He headed the implementation of a system for automating the construction of translators, a series of projects on automatic parallelization of programs. The Sinaps/3 language intended for the

development of mass service systems was proposed under his supervision. Sinaps/3 was an extension of the C language allowing the description of data and process distribution, distributed translation processes on distributed resources.

He headed the development of the global project for the gradual integration of information resources of organizations of RAS into the Unified Scientific Information Space (USIS). The problem was to create a conceptual basis and infrastructure for integrating heterogeneous information and computing resources of RAS organizations into a unified information space. This project was based on the software package called “Scientific Institute of the Russian Academy of Sciences” (SI RAS) considered as a standard for automating the information activities of a scientific institute within RAS. USIS was assumed as an integrated source of scientific information ensuring the relevance of this information and broad opportunities for an accurate search for scientific resources, support for scientific communication tools, etc.

It can now be said that these developments were somewhat ahead of their time, since the scientific community in Russia did not realize the idea of data integration in a sufficient way. Development of RAS information resources integration systems was restarted in 1998, before the exponential growth of information systems and the new era of artificial intelligence requiring the integration of large volumes of data. However, the USIS system was deployed into operation. The RAS web portal is based on a modification of USIS today.

The implementation of the USIS project gave birth to several digital library projects. The most notable projects are the web portal of the digital library “Scientific Heritage of RAS”, the geportal “GeoMeta”, and the personal semantic digital library “LibMeta”. These digital libraries apply domain ontologies and knowledge graphs to represent data. Artificial intelligence algorithms are now used to navigate the data. The teams created by Vladimir Serebyakov are still developing the mentioned projects.

Since 2001, Vladimir Serebyakov was a member of the Coordinating and Program committees of the All-Russian conference “Digital Libraries: Advanced Methods and Technologies, Electronic Collections” (RCDL), which transformed later into the International Conference “Data Analytics and Management in Data-Intensive Domains” (DAMDID/RCDL).

The untimely death of Vladimir Serebyakov is a great loss for the scientific community, his family, colleagues and students.

Igor Sokolov  
Mikhail Posypkin  
Victor Zakharov  
Alexander Elizarov  
Konstantin Vorontsov  
Natalia Tuchkova  
Olga Ataeva  
Kirill Teymurazov  
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