Foreword

It gives us great pleasure to introduce the Proceedings of the fifteenth edition of the CSIT-2025 International Conference on Computer Science and Information Technologies.

This conference has become an established tradition within the scientific community, bringing together leading scientists, engineers, and young researchers from around the world.

Our common goal is to promote the free exchange of scientific ideas, discuss current trends in Computer Science, Applied Mathematics, and Information Technologies, and create new bridges of cooperation.

This year's conference is a truly international gathering, featuring over 80 reports from 17 countries, including Armenia, Austria, Belarus, China, France, Georgia, Germany, Great Britain, Iran, Italy, Israel, Jordan, Kazakhstan, Poland, Russia, Serbia, and the United States.

The scientific program is structured into seven core sections:

- Artificial Intelligence and Machine Learning,
- High Performance and Cloud Computing,
- Discrete Mathematics and Combinatorial Analysis,
- Mathematical Modelling,
- Pattern Recognition and Image Processing,
- Information and Cybersecurity,
- Telecommunication and Networking.

The path to CSIT-2025 was paved by several workshops. The first two workshops, titled "Data Analysis and Mathematical Modelling" and "High-Performance Artificial Intelligence", were held in 2024 in Tbilisi at the University of Georgia and in Yerevan, at the Institute for Informatics and Automation Problems of the National Academy of Sciences of the Republic of Armenia. Additionally, the workshop "Large Digital Models and Analysis of Specific Patterns" was held on May 30-31, 2025, in Yerevan. Organizing such scientific events helped to broaden the circle of specialists and shape the main session topics of this conference.

The conference will also feature roundtables and workshops, including themes such as "Supercomputers in Armenia and Europe: From Infrastructure to Applications" and "Advanced Digital Technologies and Generative AI in Education and Management." These events will provide an opportunity to jointly discuss not only scientific issues, but also practical steps aimed at technological advancement.

We are privileged to host a series of plenary lectures from our world-renowned keynote speakers - Prof. Michel Dayde, Prof. Peter Wittenburg, Prof. Sos Agaian, Prof. Denis Turdakov and Prof. Chris Lorenz. Their talks will address critical challenges, from bridging trusted data spaces and developing reliable AI for autonomous systems to the future of high-performance computing.

It is noteworthy that Armenia has been actively developing its capabilities in artificial intelligence and high-performance computing in recent years. The inauguration of the National Supercomputer Centre in May 2024, with its main resource "Aznavour", provides a vital platform for scientific and applied research that we are eager to integrate into European and global initiatives.

We are grateful to all the conference participants who responded to our invitation. The conference was organized by the Institute for Informatics and Automation Problems of the National Academy of Sciences of the Republic of Armenia and the National Polytechnic University of the Republic of Armenia. The main sponsor of CSIT-2025 is the Higher Education and Science Committee of the Ministry of Education, Science, Culture and Sport of the Republic of Armenia.

We wish you all fruitful work in Yerevan.

Conference Co-Chairs:

Yu. Shoukourian, National Academy of Sciences of the Republic of Armenia

M. Dayde, CNRS/IRIT, University of Toulouse, Toulouse INP

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