Preface: Algorithms of data processing

Maksym Zaliskyi[1,*,†], Nina Rizun[2,†], Ivan Ostroumov[1,†] and Lidiia Tereshchenko [1,†]

[1] *National Aviation University, Liubomyra Huzara Ave., 1, Kyiv, 03058, Ukraine*
[2] *Gdansk University of Technology, Gabriela Narutowicza Str., 11/12, Gdansk, 80233, Poland*

Abstract
This document is the preface of the International Workshop on Algorithms of Data Processing (ADP), November 5, 2024, held at National Aviation University, Kyiv, Ukraine.

Keywords
computer science, data processing, big data, artificial intelligence, human factor in data processing, machine learning, deep learning

1. Preface

The international workshop on Algorithms of Data Processing (ADP 2024) took place on November 5, 2024, at the National Aviation University (Kyiv, Ukraine). ADP is focused on the development and analysis of data processing methods and technologies for various industries. ADP workshop was a great platform for technical exchanges between different research teams working under different applications of algorithmic support for optimal solutions of complex tasks.

ADP workshop was aimed at considering the various topics of data science and mostly focused on statistics, big data analysis, and different algorithms of data processing which could be applied to specialized computational equipment.

ADP workshop was mainly organized by professors of the Laboratory of Computerized Systems for the solution of general navigation problems (GenNavLab) Maksym Zaliskyi and Ivan Ostroumov at the National Aviation University.

Members of research teams working on data processing algorithms for aviation industry, in particular for communication, navigation, and surveillance systems, share their knowledge and skills, disseminate obtained scientific results in machine learning, deep learning, artificial intelligence, decision-making, algorithmic support systems during air traffic control, equipment operation and maintenance, and other interest problems of data processing methods application.

The main conference topics include:

- Algorithms of data processing and analysis;
- Efficient data storage technique;
- Data inaccuracy and reliability issues;
- Big data processing;
- Specialized computation equipment for data processing;
- Geographic data processing;
- Data interpolation and extrapolation;
- Data fusion;

- Artificial intelligence;
- Machine learning methods;
- Deep learning techniques;
- Image processing;
- Human factor in data processing;
- Big data applications in various domains;
- Real time data processing.

The ADP 2024 was in a hybrid format. Scientists from Ukraine participate ADP in-person at the National Aviation University (Figure 1). Because of the War in Ukraine participants from outside of Ukraine and scientists from places with high risk of missile attacks used virtual platform (Google Meet). Participants from France, Germany, Ireland, Latvia, Georgia, Sweden, Indonesia, and China joined the workshop in hybrid mode. The workshop took the form of oral presentations of peer-reviewed regular papers.

Figure 1: Participants of ADP 2024 workshop.

ADP 2024 received 24 submissions in total. All papers were reviewed by two reviewers. Out of these, 18 papers were accepted for this volume, all as regular papers.

All our team invites you to visit the ADP 2024 workshop website https://www.ans.nau.edu.ua/adp where you can find all the relevant information about this exciting event.

2. Acknowledgments

Program Committee

- Sergiy Gnatyuk, National Aviation University (Ukraine)
- Oleksandr Solomentsev, National Aviation University (Ukraine)
- Tetiana Shmelova, National Aviation University (Ukraine)
- Yuliya Averyanova, National Aviation University (Ukraine)
- Olha Sushchenko, National Aviation University (Ukraine)
- Simeon Zhyla, National Aerospace University "Kharkiv Aviation Institute" (Ukraine)
- Roman Odarchenko, National Aviation University (Ukraine)
- Vladimir Pavlikov, National Aerospace University "Kharkiv Aviation Institute" (Ukraine)
- Samiksha Shukla, CHRIST University (India)
- Nataliia Kuzmenko, National Aviation University (Ukraine)
- Khadija Slimani, Higher School of Computer Science, Electronics and Automation (France)
- Maxim Yatsko, SmartLynx Airlines Mazrudas (Latvia)
- Yuliya Sikirda, Flight Academy of the National Aviation University (Ukraine)
- Roman Volianskyi, National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" (Ukraine)
- Nikolay Kiktev, University of Life and Environmental Sciences of Ukraine (Ukraine)