Preface: Computational methods in systems engineering

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Abstract

This document is the preface of the International Workshop on Computational Methods in Systems Engineering (CMSE), June 17, 2024, held at National Aviation University, Kyiv, Ukraine.

Keywords

computer science, system analysis, automatic control, data analysis, system engineering

1. Preface

The international workshop on Computational Methods in Systems Engineering (CMSE 2024) took place on June 17, 2024, at the National Aviation University (Kyiv, Ukraine). CMSE is focused on the development of computational and information technologies for systems engineering in a wide area of application. CMSE workshop was a great platform for technical exchanges between different research teams working under different applications of computational methods for optimal solutions of complex tasks. Special attention during the workshop has been given to the aerospace domain with a discussion of effective computation methods for automatic control systems, which are used in a variety of computerized systems. CMSE mostly focuses on both theoretical and applied problems of computer science in system engineering.

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

Members of research teams working on information technologies and software development for specialized automatic control systems share their knowledge and discuss obtained results in system design, automatic control, intellectual systems, automatic air traffic control, safety systems, maintenance, and other interest problems of information technologies.

The main conference topics include:

- Intellectual systems of control;
- Specialized computer system design;
- Software for automatic control;
- Communication, navigation, and surveillance systems;
- System maintenance;
- System analysis;
- Data mining;
- Data visualization;
- Big-data analysis;
- Human-machine interaction;
- Practical aspects of information technologies in the aerospace domain.

The CMSE 2024 was in a hybrid format. Scientists from Ukraine participate CMSE 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, Spain, Ireland, Latvia, Canada, Indonesia, Mongolia, 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 CMSE 2024 workshop.

CMSE 2024 received 21 submissions in total. All papers were reviewed by two reviewers. Out of these, 15 papers were accepted for this volume, all as regular papers.

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

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