

Lecture Notes on Data Engineering and Communications Technologies

Volume 77

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Sergii Babichev · Volodymyr Lytvynenko
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Lecture Notes in Computational Intelligence and Decision Making

2021 International Scientific Conference
“Intellectual Systems of Decision-making
and Problems of Computational Intelligence”,
Proceedings

 Springer

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ISSN 2367-4512 ISSN 2367-4520 (electronic)
Lecture Notes on Data Engineering and Communications Technologies
ISBN 978-3-030-82013-8 ISBN 978-3-030-82014-5 (eBook)
<https://doi.org/10.1007/978-3-030-82014-5>

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This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

Collecting, analysis and processing information are the current directions of modern computer science. Many areas of current existence generate a wealth of information which should be stored in a structured manner, analyzed and processed appropriately in order to gain the knowledge concerning investigated process or object. Creating new modern information and computer technologies for data analysis and processing in various fields of data mining and machine learning create the conditions for increasing effectiveness of the information processing by both the decrease of time and the increase of accuracy of the data processing.

The international scientific conference “Intellectual Decision-Making Systems and Problems of Computational Intelligence” is a series of conferences performed in East Europe. They are very important for this geographic region since the topics of the conference cover the modern directions in the field of artificial and computational intelligence, data mining, machine learning and decision making. The aim of the conference is the reflection of the most recent developments in the fields of artificial and computational intelligence used for solving problems in a variety of areas of scientific researches related to data mining, machine learning and decision making.

The current ISDMCI’2021 conference held in Zalizny Port, Kherson region, Ukraine, from May 24 to 28, 2021, was a continuation of the highly successful ISDMCI conference series started in 2006. For many years, ISDMCI has been attracting hundreds or even thousands of researchers and professionals working in the field of artificial intelligence and decision making. This volume consists of 54 carefully selected papers that are assigned to three thematic sections:

Section 1. Analysis and Modeling of Complex Systems and Processes:

- Methods and tools of system modeling under uncertainty
- Problems of identification of complex system models and processes
- Modeling of operated complex systems
- Modeling of various nature dynamic objects
- Time series forecasting and modeling
- Information technology in education

Section 2. Theoretical and Applied Aspects of Decision-Making Systems:

- Decision-making methods
- Multicriterial models of decision making under uncertainty
- Expert systems of decision making
- Methods of artificial intelligence in decision-making systems
- Software and tools for synthesis of decision-making systems
- Applied systems of decision-making support

Section 3. Computational Intelligence and Inductive Modeling:

- Inductive methods of complex systems modeling
- Computational linguistics
- Data mining
- Multiagent systems
- Neural networks and fuzzy systems
- Evolutionary algorithm and artificial immune systems
- Bayesian networks
- Hybrid systems and models
- Fractals and problems of synergetics
- Images recognition and cluster analysis

We hope that the broad scope of topics related to the fields of artificial intelligence and decision making covered in this proceedings volume will help the reader to understand that the methods of data mining and machine learning have become an important element of modern computer science.

June 2021

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Yuri Krak
Sergii Babichev
Yuriy Bardachov
Volodymyr Lytvynenko

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