Learning and Analytics in Intelligent Systems 10

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Biologically Inspired Techniques in Many-Criteria Decision Making

International Conference on Biologically Inspired Techniques in Many-Criteria Decision Making (BITMDM-2019)

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- Addresses recent challenges in optimization methods and techniques associated with the exponential growth in data production
- Gathers the Proceedings of the International Conference on Biologically Inspired Techniques in Many-Criteria Decision Making (BITMDM-2019), held in Balasore, India, on December 19–20, 2019
- Demonstrates how to derive optimal solutions for data-driven problems

This book addresses many-criteria decision-making (MCDM), a process used to find a solution in an environment with several criteria. In many real-world problems, there are several different objectives that need to be taken into account. Solving these problems is a challenging task and requires careful consideration. In real applications, often simple and easy to understand methods are used; as a result, the solutions accepted by decision makers are not always optimal solutions. On the other hand, algorithms that would provide better outcomes are very time consuming. The greatest challenge facing researchers is how to create effective algorithms that will yield optimal solutions with low time complexity. Accordingly, many current research efforts are focused on the implementation of biologically inspired algorithms (BIAs), which are well suited to solving uni-objective problems. This book introduces readers to state-of-the-art developments in biologically inspired techniques and their applications, with a major emphasis on the MCDM process. To do so, it presents a wide range of contributions on e.g. BIAs, MCDM, nature-inspired algorithms, multi-criteria optimization, machine learning and soft computing.

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