Efficiency and Scalability Methods for Computational Intellect

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Computational modeling and simulation has developed and expanded into a diverse range of fields such as digital signal processing, image processing, robotics, systems biology, and many more; enhancing the need for a diversifying problem solving applications in this area.

Efficiency and Scalability Methods for Computational Intellect presents various theories and methods for approaching the problem of modeling and simulating intellect in order to target computation efficiency and scalability of proposed methods. Researchers, instructors, and graduate students will benefit from this current research and will in turn be able to apply the knowledge in an effective manner to gain an understanding of how to improve this field.

Topics Covered:

- Artificial Intelligence
- Bayesian Methods
- Cognitive Informatics
- Digital Signal Processing
- Human-Computer Interaction
- Image Processing
- National Security
- Robotics

Market: This premier publication is essential for all academic and research library reference collections. It is a crucial tool for academicians, researchers, and practitioners. Ideal for classroom use.

Boris Igelnik received MS degree in electrical engineering from the Moscow Electrical Engineering Institute of Communication, MS degree in mathematics from the Moscow State University, and PhD degree in Electrical Engineering from the Institute for Problems of Information Transmission, Academy of Sciences USSR, Moscow, Russia and the Moscow Electrical Engineering Institute of Communication. He is Chief Scientist at the BMI Research, Inc., Richmond Heights (Cleveland), OH, USA. His current research interests are in the areas of computational and artificial intelligence, digital signal processing, image processing, adaptive control, robotics, and computational models of intellect. Boris Igelnik is a Senior Member of IEEE.
Section 1: Efficient and Scalable Methods in Machine Learning, Data Mining, and Medicine

Chapter 1
Up-to-Date Feature Selection Methods for Scalable and Efficient Machine Learning
Alonso-Betanzos Amparo (University of A Coruña, Spain)
Bolón-Canedo Verónica (University of A Coruña, Spain)
Fernández-Francos Diego (University of A Coruña, Spain)
Porto-Díaz Iago (University of A Coruña, Spain)
Sánchez-Maroto Noelia (University of A Coruña, Spain)

Chapter 2
Online Machine Learning
Fontenla-Romero Óscar (University of A Coruña, Spain)
Guijarro-Berdiñas Bertha (University of A Coruña, Spain)
Martínez-Rego David (University of A Coruña, Spain)
Pérez-Sánchez Beatriz (University of A Coruña, Spain)
Peteiro-Barral Diego (University of A Coruña, Spain)

Chapter 3
Uncertainty in Concept Hierarchies for Generalization in Data Mining
Beaubouef Theresa (Southeastern Louisiana University, USA)
Pety Frederick E. (Stennis Space Center, USA)

Chapter 4
Efficiency and Scalability Methods in Cancer Detection Problems
Stainvas Inna (General Motors - Research & Development, Israel)
Manevitch Alexandra (Siemens Computer Aided Diagnosis Ltd., Israel)

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Chapter 5
The Kolmogorov Spline Network for Authentication Data Embedding in Images
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Real-Time Fuzzy Logic-based Hybrid Robot Path-Planning Strategies for a Dynamic Environment
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Váňaček Jan (Technical University of Košice, Slovakia)

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Carvalho Marcos (Florida Institute of Technology, USA)
Ham Fredric M. (Florida Institute of Technology, USA)

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Du Danxi (Cleveland State University, USA)
Simon Dan (Cleveland State University, USA)

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Sprecher David (University of California at Santa Barbara, USA)

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Achler Tsvi (Los Alamos National Labs and IBM Research Almaden, USA)

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Nikolova Natalia D. (Nikola Vaptsarov Naval Academy, Bulgaria)
Tenekedjiev Kiril I. (Nikola Vaptsarov Naval Academy, Bulgaria)

Chapter 14
Widely Linear Estimation with Geometric Algebra
Nitta Tohru (National Institute of Advanced Industrial Science and Technology (AIST), Japan)

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