Handbook of Research on Machine Learning Innovations and Trends (2 Vols.)

Part of the Advances in Computational Intelligence and Robotics Book Series

Aboul Ella Hassanien (Cairo University, Egypt) and Tarek Gaber (Suez Canal University, Egypt)

Description:

Continuous improvements in technological applications have allowed more opportunities to develop automated systems. This not only leads to higher success in smart data analysis, but it increases the overall probability of technological progression.

The Handbook of Research on Machine Learning Innovations and Trends is a key resource on the latest advances and research regarding the vast range of advanced systems and applications involved in machine intelligence. Highlighting multidisciplinary studies on decision theory, intelligent search, and multi-agent systems, this publication is an ideal reference source for professionals and researchers working in the field of machine learning and its applications.


Topics Covered:
- Chaos Theory
- Chaotic Systems
- Decision Theory
- Fuzzy Logic
- Granular Computing
- Intelligent Search
- Multi-Agent Systems
- Web Mining

Hardcover: $465.00
E-Book: $465.00
Hardcover + E-Book: $560.00
Table of Contents

Section 1: State-of-the-Art Techniques

Chapter 1
T-Spanner Problem: Genetic Algorithms for the t-Spanner Problem
Riham Moharam, Ehab Morsy and Ismail A. Ismail

Chapter 2
Breast Cancer Diagnosis using Relational Discriminant Analysis of Malignancy-Associated Changes
Dmitry Klyushin, Natalia Boroday, Kateryna Golubeva, Maryna Prysiazhna and Maksym Shlykov

Chapter 3
Early-stage Ovarian Cancer Diagnosis Using Fuzzy-Rough Sets with SVM Classification
Nora Shoaiq Mohammed Elmogy, A. M. Riad, Hosam Zaghoul, and Farid A. Badria

Chapter 4
Data Storage Security Service in Cloud Computing: Challenges and Solutions
Alshaimaa Abo-alian, N. L. Badr and M. F. Tolba

Chapter 5
Workload Management Systems for the Cloud Environment
Eman A. Maghawry, Rasha M. Ismail, Nagwa L. Badr, M. F. Tolba

Chapter 6
Segmentation of Brain Tumor from MRI Images Based on Hybrid Clustering Techniques
Eman A. Abdel Maksoud, Mohammed Elmogy, and Rashid Mokhtar Al-Awadi

Chapter 7
Localization and Mapping for indoor navigation— Survey
Heba Gaber, Mohamed Marey, Safaa Amin, and Mohamed F. Tolba

Chapter 8
Enzyme Function Classification: Reviews, Approaches and Trends
Mahir M. Sharif, Alaa Tharwat, Aboul Ella Hassanien, Hesham A. Hefny

Chapter 9
A Review of Vessel Segmentation Methodologies and Algorithms
Gehad Hassan and Aboul Ella Hassanien

Chapter 10
Cloud Services Publication and Discovery
Yasmine M. Alfify, Ibrahim F. Moawad, Nagwa L. Badr, and M. F. Tolba

Section 2: Applications-Based Machine Learning

Chapter 11
Enhancement of Data Quality in Health Care Industry: A promising Data Quality Approach
Asmaa S. Abd, Rashed K. Salem, and Hatem M. Abdul-Kader

Chapter 12
Investigation of Software Reliability Prediction Using Statistical and Machine Learning Methods
Pradeep Kumar

Chapter 13
Fuzzy-Based Approach for Reducing the Impacts of Climate Changes on Agricultural Crops
Assem H. Mohammed and Ahmed M. Gadallah

Chapter 14
Directional Multi-scale Stationary Wavelet-based Representation for Human Action Classification
M. N. AlBerry , M. A.-M. Salem , H. M. Ebeid, A. S. Hussein, and M. F. Tolba

Chapter 15
Data Streams Processing Techniques

Fatma Mohamed, Rasha Ismail, Nagwa Badr, Mohamed Fahmy Tolba

Chapter 16
A Preparation Framework for EHR Data to Construct CBR Case-Base
Shaker El-Sappagh, Mohammed Elmogy, A. M. Riad, Farid Badria, Hosam Zaghoul

Chapter 17
Detecting Significant Changes in Image Sequences
Sergii Mashtalir and Olena Mikhnova

Chapter 18
Multiple Sequence Alignment Optimization using Meta-heuristic Techniques, Mohamed Issa

Chapter 19
Recent Survey on Medical Image Segmentation
Mohamed A-Megeed Salem, Alaa Atef, Alaa Salah, Marwa I. Shams

Chapter 20
Machine Learning Applications in Breast Cancer Diagnosis
Syed Jamal Safdar Gardezi, Mohamed Meselhy Eltoukh, Ibrahim Faye

Chapter 21
A Hybrid Optimization Algorithm for Single and Multi-objective Optimization Problems
Rizk M. Rizk-Allah and Aboul Ella Hassanien

Chapter 22
Neuroimaging Machine Learning Techniques for Alzheimer's disease Diagnosis
Gehad Ismail Sayed and Aboul Ella Hassanien

Chapter 23
Swarm Intelligence Based on Remote Sensing Image Fusion
Resham Gharbia and Aboul Ella Hassanien

Chapter 24
Grey Wolf Optimization-based Segmentation Approach for Abdomen CT Liver Images
Abdalla Mostafa, Aboul Ella Hassanien and Hesham Hefny

Chapter 25
3D Watermarking Approach Using Particle Swarm Optimization Algorithm
Mona M. Soliman and Aboul Ella Hassanien

Chapter 26
Particle Swarm Optimization - A Tutorial
Alaa Tharwat, Tarek Gaber, Aboul Ella Hassanien, and Basem E. ElNaghi

Chapter 27
A Comparison of Open Source Data Mining Tools for Breast Cancer Classification
Ahmed AbdElhafeez Ibrahim, Atallah Ibrahim Hashad and Negm Eldin Mohamed Shawky

Chapter 28
2D and 3D intelligent watermarking
Mourad R Mouhamed, Ashraf Darwish and Aboul Ella Hassanien
Ashraf Darwish

Section 3: Innovative ML Applications

Chapter 29
Differential Evolution Algorithm with Space Reduction for Solving Large Scale Global Optimization Problems
Ahmed Fouad Ali1 and Nagsha Nageh Ahmed 2

Chapter 30
Interpreting Brain Waves
Noran Magdy El-Kafrawy, Doaa Hegazy, M. F. Tolba

Chapter 31
Chapter 41  
Enhanced Breast Cancer Diagnosis System using Fuzzy Clustering Means Approach in Digital Mammography  
Mohammed A. Osman, Ashraf Danish, Ayman E. Khedr, Atef Z. Galwash, Aboul Ella Hassanien

Chapter 42  
TAntNet-4: A Threshold based AntNet Algorithm With Improved Scout Behavior  
Ayman M. Ghazy, Hesham A. Hefny

Chapter 43  
Digital Images Segmentation using a Physical Inspired Algorithm  
Diego Oliva and Aboul Ella Hassanien

Chapter 44  
A Proposed Architecture of Key Management Schema For Centralized Quantum Network  
Ahmed Farouk, Mohamed Elhoseny, Josep Batle, Mosayeb Naseri, and Aboul Ella Hassanien

Chapter 45  
Mohamed Elhoseny, Ahmed Farouk, Josep Batle, Mohamed Abouhawwash, and Aboul Ella Hassanien

Chapter 46  
Color Invariant Representation and Applications  
Abdelhameed Ibrahim, Takahiko Horiuchi, Shoji Tominaga and Aboul Ella Hassanien

Chapter 47  
An Efficient Approach for Community Detection In Complex Social Networks Based On Elephant Swarm Optimization Algorithm  
Khaled Ahmed, Aboul Ella Hassanien, and Ehab Ezzat

Chapter 48  
Designing Multilayer Feedfoward Neural Networks using Multi-verse Optimizer  
Mohamed F. Hassanin, Abdullah M. Shoeb. And Aboul Ella Hassanien

Aboul Ella Hassanien (Abo) is a Professor at Cairo University, Faculty of Computers and Information, IT Department and the Chair of Scientific Research Group in Egypt (SRGE). Abo is the chair of the International Rough Sets Society-Egypt Chapter. He received his B.Sc. with honors in 1986 and M.Sc degree in 1993, both from Ain Shams University, Faculty of Science, Pure Mathematics and Computer Science Department, Cairo, Egypt. On September 1998, he received his doctoral degree from the Department of Computer Science, Graduate School of Science & Engineering, Tokyo Institute of Technology, Japan. He works in a multidisciplinary environment involving machine intelligence, network security and cryptology, data mining, various issues in intelligent environment including monitoring pollutions, technologies for disabled people including text-to-speech for blind people, Arabic sign Language, Social networks, biomedical engineering and bioinformatics and their applications to various real-world problems. He has authored/coauthored over 360 research publications in peer-reviewed reputed journals, book chapters and conference proceedings. He has served as the program committee member of various international conferences and reviewer for various international journals. He has received the excellence younger researcher award from Kuwait University for the academic year 2003/2004. He has guest edited many special issues for international scientific journals. He has directed many funded research projects. He is the editor and co-editor for more than 30 books in the area of rough computing, computational intelligence, social networks, bioinformatics, and E-commerce. For more details http://www.egyptscience.net

Order Information
Phone: 717-533-8845 x100
Toll Free: 1-866-342-6657
Fax: 717-533-8661 or 717-533-7115
Online Bookstore: www.igi-global.com