

Intelligent Systems And Technologies Methods And Applications Studies In Computational Intelligence

This book offers to readers a selection of refereed papers that were presented at the Sixth International Symposium on Intelligent Systems Technologies and Applications (ISTA'20). All submissions were evaluated on the basis of their significance, novelty, and technical quality. This book consists of 28 papers (19 regular and 9 short papers) that were virtually presented at the Symposium. The papers cover different areas such as big data analytics, security and privacy, Internet of things, machine and deep learning, health informatics, visual computing, signal processing, and natural language processing. The book is directed to the researchers and scientists engaged in various fields of intelligent systems.

Proceedings of the Sixth International Conference on Intelligent System and Knowledge Engineering presents selected papers from the conference ISKE 2011, held December 15-17 in Shanghai, China. This proceedings doesn't only examine original research and approaches in the broad areas of intelligent systems and knowledge engineering, but also present new methodologies and practices in intelligent computing paradigms. The book introduces the current scientific and technical advances in the fields of artificial intelligence, machine learning, pattern recognition, data mining, information retrieval, knowledge-based systems, knowledge representation and reasoning, multi-agent systems, natural-language processing, etc. Furthermore, new computing methodologies are presented, including cloud computing, service computing and pervasive computing with traditional intelligent methods. The proceedings will be beneficial for both researchers and practitioners who want to utilize intelligent methods in their specific research fields. Dr. Yinglin Wang is a professor at the Department of Computer Science and Engineering, Shanghai Jiao Tong University, China; Dr. Tianrui Li is a professor at the School of Information Science and Technology, Southwest Jiaotong University, China.

"This book provides knowledge and insights on present and future AI applications in Operations Management presenting tools and decisions in terms of theoretical and empirical models, methods and proposed applications"--Provided by publisher.

This book demonstrates the success of Ambient Intelligence in providing possible solutions for the daily needs of humans. The book addresses implications of ambient intelligence in areas of domestic living, elderly care, robotics, communication, philosophy and others. The objective of this edited volume is to show that Ambient Intelligence is a boon to humanity with conceptual, philosophical, methodical and applicative understanding. The book also aims to schematically demonstrate developments in the direction of augmented sensors, embedded systems and behavioral intelligence towards Ambient Intelligent Networks or Smart Living Technology. It contains chapters in the field of Ambient Intelligent Networks, which received highly positive feedback during the review process. The book contains research work, with in-depth state of the art from augmented sensors, embedded technology and artificial intelligence along with cutting-edge research and development of technologies and applications of Ambient Intelligent Networks. This book is intended to introduce ideas, methods, technologies of the future development of humanity, Science and Technology.

Selected Papers from the International Conference on Computer Science and Information Technologies, CSIT 2016, September 6-10 Lviv, Ukraine

Intelligent Systems and Applications

Intelligent Systems in Operations: Methods, Models and Applications in the Supply Chain

Proceedings of the Sixth International Conference on Intelligent Systems and Knowledge Engineering, Shanghai, China, Dec 2011 (ISKE 2011)

Proceedings of 5th Computational Methods in Systems and Software 2021, Vol. 2

Computer Vision and Image Processing in Intelligent Systems and Multimedia Technologies

Intelligent Systems and Methods to Combat Covid-19

This book provides a state-of-the-art perspective on intelligent process-aware information systems and presents chapters on specific facets and approaches applicable to such systems. Further, it highlights novel advances and developments in various aspects of intelligent process-aware information systems and business process management systems. Intelligence capabilities are increasingly being integrated into or created in many of today's software products and services. Process-aware information systems provide critical computing infrastructure to support the various processes involved in the creation and delivery of business products and services. Yet the integration of intelligence capabilities into process-aware information systems is a non-trivial yet necessary evolution of these complex systems. The book's individual chapters address adaptive process management, case management processes, autonomically-capable processes, process-oriented information logistics, process recommendations, reasoning over process models, process portability, and business process intelligence. The primary target groups are researchers and PhD/Master students in the field of information systems.

This volume presents recent research on Methodologies and Intelligent Systems for Technology Enhanced Learning. It contains the contributions of ebuTEL 2013 conference which took place in Trento, Italy, on September, 16th 2013 and of mis4TEL 2014 conference, which took take place in Salamanca, Spain, on September, 4th-6th 2014. This conference series are an open forum for discussing intelligent systems for Technology Enhanced Learning and empirical methodologies for its design or evaluation.

The book reports on new theories and applications in the field of intelligent systems and computing. It covers computational and artificial intelligence methods, as well as advances in computer vision, current issue in big data and cloud computing, computation linguistics, cyber-physical systems as well as topics in intelligent information management. Written by active researchers, the different chapters are based on contributions presented at the workshop in intelligent systems and computing (ISC), held during CSIT 2016, September 6-9, and jointly organized by the Lviv Polytechnic National University, Ukraine, the

Kharkiv National University of Radio Electronics, Ukraine, and the Technical University of Lodz, Poland, under patronage of Ministry of Education and Science of Ukraine. All in all, the book provides academics and professionals with extensive information and a timely snapshot of the field of intelligent systems, and it is expected to foster new discussions and collaborations among different groups.

Intelligent systems and technologies are increasing finding their ways in our daily lives. This book presents a sample of recent research results from key researchers. The contributions include: Introduction to intelligent systems; A Fuzzy Density Analysis of Subgroups by means of DNA Oligonucleotides; Evolution of Cooperating Classification Rules with an Archiving Strategy to Underpin Collaboration; Designing Agents with Dynamic Capability; Localized versus Locality Preserving Representation Methods in Face Recognition Tasks; Invariance Properties of Recurrent Neural Networks; Solving Bioinformatics Problems by Soft Computing Techniques; Transforming an Interactive Expert Code into a Statefull Service and a Multicoreenabled System; Ro-WordNet with Paradigmatic Morphology and Subjectivity Mark-up; Special Cases of Relative Object Qualification using the AMONG Operator; Effective Speaker Tracking Strategies for Multi-party Human-Computer Dialogue; The Fuzzy Interpolative Control for Passive Greenhouses; GPS safety system for airplanes; 3D Collaborative Interfaces for E-learning; Open Projects in Contemporary E-Learning; Software Platform for Archaeological Patrimony Inventory and Management. The book is directed to the graduate students, researchers, professors and the practitioner of intelligent systems.

Foundations of Intelligent Systems

Proceedings of the 6th Computer Science On-line Conference 2017 (CSOC2017), Vol 2

Prospects, Tools and Applications

Intelligent Systems: Theory, Research and Innovation in Applications

Methods, Models and Applications in the Supply Chain

Intelligent System Algorithms and Applications in Science and Technology

Intelligent Systems

This book constitutes the second part of refereed proceedings of the 5th Computational Methods in Systems and Software 2021 (CoMeSySo 2021) proceedings. The real-world problems related to data science and algorithm design related to systems and software engineering are presented in this papers. Furthermore, the basic research' papers that describe novel approaches in the data science, algorithm design and in systems and software engineering are included. The CoMeSySo 2021 conference is breaking the barriers, being held online. CoMeSySo 2021 intends to provide an international forum for the discussion of the latest high-quality research results

The book presents a remarkable collection of chapters covering a wide range of topics in the areas of intelligent systems and artificial intelligence, and their real-world applications. It gathers the proceedings of the Intelligent Systems Conference 2019, which attracted a total of 546 submissions from pioneering researchers, scientists, industrial engineers, and students from all around the world. These submissions underwent a double-blind peer-review process, after which 190 were selected for inclusion in these proceedings. As intelligent systems continue to replace and sometimes outperform human intelligence in decision-making processes, they have made it possible to tackle a host of problems more effectively. This branching out of computational intelligence in several directions and use of intelligent systems in everyday applications have created the need for an international conference as a venue for reporting on the latest innovations and trends. This book collects both theory and application based chapters on virtually all aspects of artificial intelligence; presenting state-of-the-art intelligent methods and techniques for solving real-world problems, along with a vision for future research, it represents a unique and valuable asset.

This book presents recent research in intelligent and fuzzy techniques. Emerging conditions such as pandemic, wars, natural disasters and various high technologies force people for significant changes in business and social life. The adoption of digital technologies to transform services or businesses, through replacing non-digital or manual processes with digital processes or replacing older digital technology with newer digital technologies through intelligent systems is the main scope of this book. It focuses on revealing the reflection of digital transformation in our business and social life under emerging conditions through intelligent and fuzzy systems. The latest intelligent and fuzzy methods and techniques on digital transformation are introduced by theory and applications. The intended readers are intelligent and fuzzy systems researchers, lecturers, M.Sc. and Ph.D. students studying digital transformation. Usage of ordinary fuzzy sets and their extensions, heuristics and metaheuristics from optimization to machine learning, from quality management to risk management makes the book an excellent source for researchers.

This book presents a selection of papers from the industrial track of ISMIS 2020. The selection emphasizes broad applicability of artificial intelligence (AI) technologies in various industrial fields. The aim of the book is to fertilize preliminary ideas of readers on the application of AI by means of already successfully implemented application examples. Furthermore, the development of new ideas and concepts shall be motivated by the variety of different application examples. The spectrum of the presented contributions ranges from education and training, industrial applications in production and logistics to the development of new approaches in basic research, which will further expand the possibilities of future applications of AI in industrial settings. This broad spectrum gives readers working in the industrial as well as the academic field a good overview of the state of the art in the field of methodologies for intelligent systems.

Intelligent Systems for Social Good

Data Science and Innovations for Intelligent Systems

Methodologies and Intelligent Systems for Technology Enhanced Learning, 9th International Conference

Advances in Intelligent Process-Aware Information Systems

Advances in Intelligent Systems and Computing

Computational Excellence and Society 5.0

Concepts, Methodologies, Tools, and Applications

Intelligent systems are required to enhance the capacities being made available to us by the internet and other computer based technologies. The theory necessary to help providing solutions to difficult problems in the construction of intelligent systems are discussed. In particular, attention is paid to situations in which the available information and data may be imprecise, uncertain, incomplete or of a linguistic nature. Various methodologies to manage such information are discussed. Among these are the probabilistic, possibilistic, fuzzy, logical, evidential and network-based frameworks. One purpose of the book is not to consider these methodologies separately, but rather to consider how they can be used cooperatively to better represent the multiplicity of modes of information. Topics in the book include representation of imperfect knowledge, fundamental issues in uncertainty, reasoning, information retrieval, learning and mining, as well as various applications. Key Features: • Tools for construction of intelligent systems • Contributions by world leading experts • Fundamental issues and applications • New technologies for web searching • Methods for modeling uncertain information • Future directions in web technologies • Transversal to methods and domains

Data science is an emerging field and innovations in it need to be explored for the success of society 5.0. This book not only focuses on the practical applications of data science to achieve computational excellence, but also digs deep into the issues and implications of intelligent systems. This book highlights innovations in data science to achieve computational excellence that can optimize performance of smart applications. The book focuses on methodologies, framework, design issues, tools, architectures, and technologies necessary to develop and understand data science and its emerging applications in the present era. This book will be useful for the research community, start-up entrepreneurs, academicians, and data centered industries and professors that are interested in exploring innovations in varied applications and areas of data science.

This book reports on new theories and applications in the field of intelligent systems and computing. It covers computational and artificial intelligence methods, as well as advances in computer vision, current issues in big data and cloud computing, computation linguistics, and cyber-physical systems. It also reports on data mining and knowledge extraction technologies, as well as central issues in intelligent information management. Written by active researchers, the respective chapters are based on papers presented at the International Conference on Computer Science and Information Technologies (CSIT 2017), held on September 5–8, 2017, in Lviv, Ukraine; and at two workshops accompanying the conference: one on inductive modeling, jointly organized by the Lviv Polytechnic National University and the National Academy of Science of Ukraine; and another on project management, which was jointly organized by the Lviv Polytechnic National University, the International Project Management Association, the Ukrainian Project Management Association, the Kazakhstan Project Management Association, and Nazarbayev University. Given its breadth of coverage, the book provides academics and professionals with extensive information and a timely snapshot of the field of intelligent systems, and is sure to foster new discussions and collaborations among different groups.

This book comprises a selection of papers on new methods for analysis and design of hybrid intelligent systems using soft computing techniques from the IFSA 2007 World Congress, held in Cancun, Mexico, June 2007.

Theory and Practice

Proceedings of the First International Conference on Innovations in Modern Science and Technology

Bio-Inspired Artificial Intelligence

Selected Papers from the International Conference on Computer Science and Information Technologies, CSIT 2019, September 17-20, 2019, Lviv, Ukraine

Methodologies and Intelligent Systems for Technology Enhanced Learning, 9th International Conference, Workshops

A Multidisciplinary Approach to Society 5.0

Computational and Statistical Methods in Intelligent Systems

Artificial intelligence has, traditionally focused on solving human-centered problems like natural language processing or common-sense reasoning. On the other hand, for a while now soft computing has been applied successfully in areas like pattern recognition, clustering, or automatic control. The papers in this book explore the possibility of bringing these two areas together. This book is unique in the way it concentrates on building intelligent software systems by combining methods from diverse disciplines, such as fuzzy set theory, neuroscience, agent technology, knowledge discovery, and symbolic artificial intelligence. The first part of the book focuses on foundational aspects and future directions; the second part provides the reader with an overview of recently developed software tools for building flexible intelligent systems; the final section studies developed applications in various fields.

The College of Computing and Informatics (CCI) at UNC–Charlotte has three departments: Computer Science, Software and Information Systems, and Bioinformatics and Genomics. The Department of Computer Science offers study in a variety of specialized computing areas such as database design, knowledge systems, computer graphics, artificial intelligence, computer networks, game design, visualization, computer vision, and virtual reality. The Department of Software and Information Systems is primarily focused on the study of technologies and methodologies for information system architecture, design, implementation, integration, and management with particular emphasis on system security. The Department of Bioinformatics and Genomics focuses on the discovery, development and application of novel computational technologies to help solve important biological problems. This volume gives an overview of research done by CCI faculty in the area of Information & Intelligent Systems. Presented papers focus on recent advances in four major directions: Complex Systems, Knowledge Management, Knowledge Discovery, and Visualization. A major reason for producing this book was to demonstrate a new, important thrust in academic research where college-wide interdisciplinary efforts are brought to bear on large, general, and important problems. As shown in the research described here, these efforts need not be formally organized joint undertakings (through parts could be) but are rather a

convergence of interests around grand themes.

As modern technologies continue to develop and evolve, the ability of users to adapt with new systems becomes a paramount concern. Research into new ways for humans to make use of advanced computers and other such technologies through artificial intelligence and computer simulation is necessary to fully realize the potential of tools in the 21st century. Advanced Methodologies and Technologies in Artificial Intelligence, Computer Simulation, and Human-Computer Interaction provides emerging research in advanced trends in robotics, AI, simulation, and human-computer interaction. Readers will learn about the positive applications of artificial intelligence and human-computer interaction in various disciplines such as business and medicine. This book is a valuable resource for IT professionals, researchers, computer scientists, and researchers invested in assistive technologies, artificial intelligence, robotics, and computer simulation.

Intelligent Systems and Technologies Methods and Applications Springer Science & Business Media

Performance Evaluation and Benchmarking of Intelligent Systems

Proceedings of the INFUS 2021 Conference, held August 24–26, 2021. Volume 1

Intelligent Systems: Concepts, Methodologies, Tools, and Applications

Selected Papers from the International Conference on Computer Science and Information Technologies, CSIT 2017, September 5–8 Lviv, Ukraine

The Role of Computational Intelligence

Advances in Information and Intelligent Systems

Fuzzy Intelligent Systems

This book reports on new theories and applications in the field of intelligent systems and computing. It covers computational and artificial intelligence methods, as well as advances in computer vision, current issues in big data and cloud computing, computation linguistics, and cyber-physical systems. It also reports on important topics in intelligent information management. Written by active researchers, the respective chapters are based on selected papers presented at the XIV International Scientific and Technical Conference on Computer Science and Information Technologies (CSIT 2019), held on September 17–20, 2019, in Lviv, Ukraine. The conference was jointly organized by the Lviv Polytechnic National University, Ukraine, the Kharkiv National University of Radio Electronics, Ukraine, and the Technical University of Lodz, Poland, under patronage of Ministry of Education and Science of Ukraine. Given its breadth of coverage, the book provides academics and professionals with extensive information and a timely snapshot of the field of intelligent systems, and is sure to foster new discussions and collaborations among different groups.

This book is based on the 9th International Conference in Methodologies and Intelligent Systems for Technology Enhanced Learning, which was hosted by the University of Salamanca and held in Ávila (Spain) from 26th to 28th June 2019. Expanding on the topics of the evidence-based TEL workshops series, it provides an open forum for discussing intelligent technologies for learning. In particular, it discusses recommendation mechanisms that enable us to tailor learning to different contexts and people, e.g., by considering their personality; and learning analytics that help augment learning opportunities, e.g., by supporting the adaptation of the learning material. In addition to technologies, it covers methods from different fields, such as educational psychology or medicine, and from diverse communities co-working with people, such as making communities and participatory design communities to help create novel TEL opportunities. Further it describes the use of methods and technologies to investigate and enhance learning for “fragile users”, like children, the elderly and those with special needs. We thank the sponsors: IEEE Systems Man and Cybernetics Society Spain Section Chapter and the IEEE Spain Section (Technical Co-Sponsor), IBM, Indra, Viewnext, Global exchange, AEPIA, APPIA and AIR institute.

This book presents new methods for and approaches to real-world problems as well as exploratory research describing novel mathematics and cybernetics applications in intelligent systems. It focuses on modern trends in selected fields of technological systems and automation control theory. It also introduces new algorithms, methods and applications of intelligent systems in automation, technological and industrial applications. This book constitutes the refereed proceedings of the Cybernetics and Mathematics Applications in Intelligent Systems Section of the 6th Computer Science On-line Conference 2017 (CSOC 2017), held in April 2017.

Fuzzy Intelligent Systems: Methodologies, Techniques and Applications comprises state-of-the-art chapters detailing how expert systems are built and the fuzzy logic resembling human reasoning powering them. Hybrid and neuro-fuzzy intelligent systems are discussed along with Evolutionary and, in particular, Genetic Algorithms. This approach has been extended by using Multiobjective Evolutionary Algorithms, which can consider multiple conflicting objectives instead of a single one. The book also discusses the hybridization between Multiobjective Evolutionary Algorithms and Fuzzy Systems which is known as Multiobjective Evolutionary Fuzzy Systems.

Intelligent Systems and Technologies

Cybernetics and Mathematics Applications in Intelligent Systems

Intelligent and Fuzzy Techniques for Emerging Conditions and Digital Transformation

Analysis and Design of Intelligent Systems Using Soft Computing Techniques

Intelligent Decision Technologies 2016

Intelligent Systems for Information Processing: From Representation to Applications

Advanced Methodologies and Technologies in Artificial Intelligence, Computer Simulation, and Human-Computer Interaction

The KES-IDT-2016 proceedings give an excellent insight into recent research, both theoretical and applied, in the field of intelligent decision making. The range of topics explored is wide, and covers methods of grouping, classification, prediction, decision support, modelling and many more in such areas as finance, linguistics, medicine, management and transportation. This proceedings contain several sections devoted to specific topics, such as: · Specialized Decision Techniques for Data Mining, Transportation and Project Management · Pattern Recognition for Decision Making Systems · New Advances of Soft Computing in Industrial and Management Engineering · Recent Advances in Fuzzy Systems · Intelligent Data Analysis and Applications · Reasoning-based Intelligent Systems · Intelligent Methods for Eye Movement Data Processing and Analysis · Intelligent Decision Technologies for Water Resources Management · Intelligent Decision Making for Uncertain Unstructured Big Data · Decision Making Theory for Economics · Interdisciplinary Approaches in Business Intelligence Research and Practice · Pattern Recognition in Audio and Speech Processing The KES-IDT conference is a well-established international annual conference, interdisciplinary in nature. These two volumes of proceedings form an excellent account of the latest results and outcomes of recent research in this leading-edge area.

This book discusses intelligent systems and methods to prevent further spread of COVID-19, including artificial intelligence, machine learning, computer vision, signal processing, pattern recognition, and robotics. It not only explores detection/screening of COVID-19 positive cases using one type of data, such as radiological imaging data, but also examines how data analytics-based tools can help predict/project future pandemics. In addition, it highlights various challenges and opportunities, like social distancing, and addresses issues such as data collection, privacy, and security, which affect the robustness of AI-driven tools. Also investigating data-analytics-based tools for projections using time series data, pattern analysis tools for unusual pattern discovery (anomaly detection) in image data, as well as AI-enabled robotics and its possible uses, the book will appeal to a broad readership, including academics, researchers and industry professionals. From artificial neural net / game theory / semantic applications, to modeling tools, smart manufacturing systems, and data science research – this book offers a broad overview of modern intelligent methods and applications of machine learning, evolutionary computation, Industry 4.0 technologies, and autonomous agents leading to the Internet of Things and potentially a new technological revolution. Though chiefly intended for IT professionals, it will also help a broad range of users of future emerging technologies adapt to the new smart / intelligent wave. In separate chapters, the book highlights fourteen successful examples of recent advances in the rapidly evolving area of intelligent systems. Covering major European projects paving the way to a serious smart / intelligent collaboration, the chapters explore e.g. cyber-security issues, 3D digitization, aerial robots, and SMEs that have introduced cyber-physical production systems. Taken together, they offer unique insights into contemporary artificial intelligence and its potential for innovation.

This book, which gathers the outcomes of the 9th International Conference on Methodologies and Intelligent Systems for Technology Enhanced Learning and its related workshops, expands on the topics of the evidence-based TEL workshop series in order to provide an open forum for discussing intelligent systems for TEL, their roots in novel learning theories, empirical methodologies for their design and evaluation, stand-alone solutions, and web-based ones. The Conference was hosted by the University of Salamanca and was held in Ávila (Spain) from the 26th to the 28th of June 2019. Its goal was to bring together researchers and developers from industry, education, and the academic world to report on the latest scientific research, technical advances, and methodologies. We wish to thank the sponsors: IEEE Systems Man and Cybernetics Society, Spain Section Chapter and the IEEE Spain Section (Technical Co-Sponsor), IBM, Indra, Viewnext, Global Exchange, AEPIA, APPIA and AIR institute.

Methods and Applications

Intelligent Systems in Industrial Applications

Intelligent Techniques and Applications in Science and Technology

Theories, Methods, and Technologies

Methodologies and Intelligent Systems for Technology Enhanced Learning, 11th International Conference

Concepts, Methods, and Technologies

Evolutionary Computation with Intelligent Systems

State-of-the-art and novel methodologies and technologies allow researchers, designers, and domain experts to pursue technology-enhanced learning (TEL) solutions targeting not only cognitive processes but also motivational, personality, or emotional factors. The International Conference in Methodologies and Intelligent Systems for Technology-Enhanced Learning (MIS4TEL'21) is hosted by the University of Salamanca and was held in Salamanca (Spain) from October 6–8, 2021. The annual appointment of MIS4TEL established itself as a consolidated fertile forum where scholars and professionals from the international community, with a broad range of expertise in the TEL field, share results and compare experiences. The calls for papers of the 11th edition of the conference welcomed novel research in TEL and expands on the topics of the previous editions: It solicited work from new research fields (ranging from artificial intelligence and agent-based systems to robotics, virtual reality, Internet of things and wearable solutions, among others) concerning methods and technological opportunities, and how they serve to create novel approaches to TEL, innovative TEL solutions, and valuable TEL experiences.

"This book contains a compendium of the latest academic material on the latest breakthroughs and recent progress in intelligent systems. Including innovative studies on information retrieval, artificial intelligence, and software engineering"--

To design and develop capable, dependable, and affordable intelligent systems, their performance must be measurable. Scientific methodologies for standardization and benchmarking are crucial for quantitatively evaluating the performance of emerging robotic and intelligent systems' technologies. There is currently no accepted standard for quantitatively measuring the performance of these systems against user-defined requirements; and furthermore, there is no consensus on what objective evaluation procedures need to be followed to understand the performance of these systems. The lack of reproducible and repeatable test methods has precluded researchers working towards a common goal from exchanging and communicating results, inter-comparing system performance, and leveraging previous work that could otherwise avoid duplication and expedite technology transfer. Currently, this lack of cohesion in the community hinders progress in many domains, such as manufacturing, service, healthcare, and security. By providing the research community with access to standardized tools, reference data sets, and open source libraries of solutions, researchers and consumers will be able to evaluate the cost and benefits associated with intelligent systems and associated technologies. In this vein, the edited book volume addresses performance evaluation and metrics for intelligent systems, in general, while emphasizing the need and solutions for standardized methods. To the knowledge of the editors, there is not a single book on the market that is solely dedicated to the subject of performance evaluation and benchmarking

of intelligent systems.

This book presents real-world problems and pioneering research in computational statistics, mathematical modeling, artificial intelligence and software engineering in the context of intelligent systems. It gathers the peer-reviewed proceedings of the 2nd Computational Methods in Systems and Software 2018 (CoMeSySo 2018), a conference that broke down traditional barriers by being held online. The goal of the event was to provide an international forum for discussing the latest high-quality research results.

Intelligent Systems and Soft Computing
Methodologies, Techniques, and Applications

Methodologies and Intelligent Systems for Technology Enhanced Learning
Data Science and Intelligent Systems
Proceedings of Sixth ISTA 2020, India
Intelligent Systems, Technologies and Applications

This book provides innovative ideas on achieving sustainable development and using green technologies to conserve our ecosystem. Innovation is the successful exploitation of a new idea. Through innovation, we can achieve MORE while using LESS. Innovations in science & technology will not only help mankind as a whole, but also contribute to the economic growth of individual countries. It is essential that the global problem of environmental degradation be addressed immediately, and thus, we need to rethink the concept of sustainable development. Indeed, new environmentally friendly technologies are fundamental to attaining sustainable development. The book shares a wealth of innovative green technological ideas on how to preserve and improve the quality of the environment, and how to establish a more resource-efficient and sustainable society. The book provides an interdisciplinary approach to addressing various technical issues and capitalizing on advances in computing & optimization for scientific & technological development, smart information, communication, bio-monitoring, smart cities, food quality assessment, waste management, environmental aspects, alternative energies, sustainable infrastructure development, etc. In short, it offers valuable information and insights for budding engineers, researchers, upcoming young minds and industry professionals, promoting awareness for recent advances in the various fields mentioned above.

This book focuses on cutting-edge innovations and core theories, principles, and algorithms applicable to a wide area. Real-life applications, case studies, and examples are included along with emerging trends, design, and optimized solutions pivoting around the needs of Society 5.0. Evolutionary Computation with Intelligent Systems: A Multidisciplinary Approach to Society 5.0 provides a holistic view of evolutionary computation techniques including principles, procedures, and future applications with real-life examples. The book comprehensively explains evolutionary computation, design, principles, development trends, and optimization and describes how it can transform the operating context of the organization. It exemplifies the potential of evolutionary computation for the next generation and the role of cloud computing in shaping Society 5.0. It also provides insight into various platforms, paradigms, techniques, and tools used in diverse fields. This book appeals to a variety of readers such as academicians, researchers, research scholars, and postgraduates.

Ongoing advancements in modern technology have led to significant developments in intelligent systems. With the numerous applications available, it becomes imperative to conduct research and make further progress in this field. Intelligent Systems: Concepts, Methodologies, Tools, and Applications contains a compendium of the latest academic material on the latest breakthroughs and recent progress in intelligent systems. Including innovative studies on information retrieval, artificial intelligence, and software engineering, this multi-volume book is an ideal source for researchers, professionals, academics, upper-level students, and practitioners interested in emerging perspectives in the field of intelligent systems.

A comprehensive introduction to new approaches in artificial intelligence and robotics that are inspired by self-organizing biological processes and structures. New approaches to artificial intelligence spring from the idea that intelligence emerges as much from cells, bodies, and societies as it does from evolution, development, and learning. Traditionally, artificial intelligence has been concerned with reproducing the abilities of human brains; newer approaches take inspiration from a wider range of biological structures that are capable of autonomous self-organization. Examples of these new approaches include evolutionary computation and evolutionary electronics, artificial neural networks, immune systems, biorobotics, and swarm intelligence—to mention only a few. This book offers a comprehensive introduction to the emerging field of biologically inspired artificial intelligence that can be used as an upper-level text or as a reference for researchers. Each chapter presents computational approaches inspired by a different biological system; each begins with background information about the biological system and then proceeds to develop computational models that make use of biological concepts. The chapters cover evolutionary computation and electronics; cellular systems; neural systems, including neuromorphic engineering; developmental systems; immune systems; behavioral systems—including several approaches to robotics, including behavior-based, bio-mimetic, epigenetic, and evolutionary robots; and collective systems, including swarm robotics as well as cooperative and competitive co-evolving systems.

Chapters end with a concluding overview and suggested reading.

Advances in Intelligent Systems and Computing II

Trends in Ambient Intelligent Systems

Proceedings of the 8th KES International Conference on Intelligent Decision Technologies (KES-IDT 2016) - Part I

Advances in Intelligent Systems and Computing IV

Proceedings of the 2019 Intelligent Systems Conference (IntelliSys) Volume 1

The 21st century has witnessed massive changes around the world in intelligence systems in order to become smarter, energy efficient, reliable, and cheaper. This volume explores the application of intelligent techniques in various fields of engineering and technology. It addresses diverse topics in such areas as machine learning-based intelligent systems for healthcare, applications of artificial intelligence and the Internet of Things, intelligent data analytics techniques, intelligent network systems and applications, and inequalities and process control systems. The authors explore the full breadth of the field, which encompasses data analysis, image processing, speech processing and recognition, medical science and healthcare monitoring, smart irrigation systems, insurance and banking, robotics and process control, and more.

The fields of computer vision and image processing are constantly evolving as new research and applications in these areas emerge. Staying abreast of the most up-to-date developments in this field is necessary in order to promote further research and apply these developments in real-world settings. Computer Vision and Image Processing in Intelligent Systems and Multimedia Technologies features timely and informative research on the design and development of computer vision and image processing applications in intelligent agents as well as in multimedia technologies. Covering a diverse set of research in these areas, this publication is ideally designed for use by academicians, technology professionals, students, and researchers interested in uncovering the latest innovations in the field.

State-of-the-art and novel methodologies and technologies allow researchers, designers, and domain experts to pursue technology-enhanced learning (TEL) solutions targeting not only cognitive processes but also motivational, personality, or emotional factors. The International Conference in Methodologies and Intelligent Systems for Technology-Enhanced Learning (MIS4TEL'21) is hosted by the University of Salamanca and was held in Salamanca (Spain) from October 6-8, 2021. The annual appointment of MIS4TEL established itself as a consolidated fertile forum where scholars and professionals from the international community, with a broad range of expertise in the TEL field, share results and compare experiences. The calls for papers of the 11th edition of the conference welcomed novel research in TEL and expands on the topics of the previous editions: It solicited work from new research fields (ranging from artificial intelligence and agent-based systems to robotics, virtual reality, Internet of things and wearable solutions, among others) concerning methods and technological opportunities, and how they serve to create novel approaches to TEL, innovative TEL solutions, and valuable TEL experiences.