Enhanced Constrained Artificial Bee Colony Algorithm For

The First International Conference on Advancement of Computer, Communication and Electrical Technology focuses on key technologies and recent progress in computer vision, information technology applications, VLSI, signal processing, power electronics & drives, and application of sensors & transducers, etc. Topics in this conference include: Computer Science This conference encompassed relevant topics in computer science such as computer vision & intelligent system, networking theory, and application of information technology. Communication Engineering To enhance the theory & technology of communication engineering, ACCET 2016 highlighted the state-of the-art research work in the field of VLSI, optical communication, and signal processing of various data formatting. Research work in the field of microwave engineering, cognitive radio and networks are also included. Electrical Technology The state-of-the-art research topic in the field of electrical & instrumentation engineering is included in this conference such as power system stability & protection, non-conventional energy resources, electrical drives, and biomedical engineering. Research work in the area of optimization and application in control, measurement & instrumentation are included as well.

Many aspects of Nature, Biology or even from Society have become part of the techniques and algorithms used in computer science or they have been used to enhance or hybridize several techniques through the inclusion of advanced evolution, cooperation or biologically based additions. The previous NICSO workshops were held in Granada, Spain, 2006, Acireale, Italy, 2007, and in Tenerife, Spain, 2008. As in the previous editions, NICSO 2010, held in Granada, Spain, was conceived as a forum for the latest ideas and the state of the art research related to nature inspired cooperative strategies. The contributions collected in this book cover topics including nature-inspired techniques like Genetic Algorithms, Evolutionary Algorithms, Ant and Bee Colonies, Swarm Intelligence approaches, Neural Networks, several Cooperation Models, Structures and Strategies, Agents Models, Social Interactions, as well as new algorithms based on the behaviour of fireflies or bats. This three volume set (CCIS 1237-1239) constitutes the proceedings of the 18th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems, IPMU 2020, in June 2020. The conference was scheduled to take place in Lisbon, Portugal, at University of Lisbon, but due to COVID-19 pandemic it was held virtually. The 173 papers were carefully reviewed and selected from 213 submissions. The papers are organized in topical sections: homage to Enrique Ruspini; invited talks; foundations and mathematics; decision making, preferences and votes; optimization and uncertainty; games; real world applications; knowledge processing and creation; machine learning I; machine learning II; XAI; image processing; temporal data processing; text analysis and processing; fuzzy interval analysis; theoretical and applied aspects of imprecise probabilities; similarities in artificial intelligence; belief function theory and its applications; aggregation: theory and practice; aggregation: pre-aggregation functions and other generalizations of monotonicity; aggregation: aggregation of different data structures; fuzzy methods in data mining and knowledge discovery; computational intelligence for logistics and transportation problems; fuzzy implication functions; soft methods in statistics and data analysis; image understanding and explainable AI; fuzzy and generalized quantifier theory; mathematical methods towards dealing with uncertainty in applied sciences; statistical image processing and analysis, with applications in neuroimaging; interval uncertainty; discrete models and computational intelligence; current techniques to model, process and describe time series; mathematical fuzzy logic and graded reasoning models; formal concept analysis, rough sets, general operators and related topics; computational intelligence methods in information modelling, representation and processing.

Finance and banking sector has had to adopt a new customer-oriented approach and go beyond traditional practices in the face of rapid changes in technology and increasing competition. Technological development, which is the pioneer of change, brings the financial system to a new level as in every field of economy. Written in these directions, this book includes current debates in the field of banking and finance. Especially the rapid entry of blockchain technology into all areas of life has caused serious changes in corporate governance mechanisms. In this context, the content of the book answers the question of why corporate governance matters a problem for the banking sector with theoretical aspects. And at the same time, it empirically discusses measures of the potential market value effects of the blockchain systems integration into corporate governance procedures. Along with these, the banking sector, which constitutes an important part of the financial system, has become more significant after the global mortgage crisis. The evaluation of the banking sector, which is structurally different from other sectors, requires a separate approach. The content of the book draws an overall picture that can be used for banks in terms of valuation methods. Additionally, the determinants of the financial performance of banks, which are the main components of the financial system, are analysed specifically in the Turkish banking sector. On the other hand, financial problems such as portfolio optimization, which is one of the important topics of financial decisions, and its applications are examined specifically for the Turkish stock market. Approaches and new methods of optimization are tested.

The volume on Data Management, Analytics and Innovations presents the latest high-quality technical contributions and research results in the areas of data management and smart computing, big data management, artificial intelligence and data analytics along with advances in network technologies. It deals with the state-of-the-art topics and provides challenges and solutions for future development. Original, unpublished research work highlighting specific research domains from all viewpoints are contributed from scientists throughout the globe. This volume is mainly designed for professional audience, composed of researchers and practitioners in academia and industry.

This Special Edition of Energies on "Energy Storage and Management for Electric Vehicles" draws together a collection of research papers that critically evaluates key areas of innovation and novelty when designing and managing the high-voltage battery system within an electrified powertrain. The addressed topics include design optimisation, mathematical modelling, control engineering, thermal management, and component sizing.

Describing a new optimization algorithm, the "Teaching-Learning-Based Optimization (TLBO)," in a clear and lucid style, this book maximizes reader insights into how the TLBO algorithm can be used to solve continuous and discrete optimization problems involving single or multiple objectives. As the algorithm operates on the principle of teaching and learning, where teachers influence the quality of learners' results, the elitist version of TLBO algorithm (ETLBO) is described along with applications of the TLBO algorithm in the fields of electrical engineering, mechanical design, thermal engineering, manufacturing engineering, civil engineering, structural engineering, computer engineering, electronics engineering, physics and biotechnology. The book offers a valuable resource for scientists, engineers and practitioners involved in the development and usage of advanced optimization algorithms.

This book constitutes the refereed proceedings of the 19th EPIA Conference on Artificial Intelligence, EPIA 2019, held in Funchal, Madeira, Portugal, in September 2019. The 119 revised full papers and 6 short papers presented were carefully reviewed and selected from a total of 252 submissions. The papers are organized in 18 tracks devoted to the following topics: AIEd - Artificial Intelligence in Education, AI4G - Artificial Intelligence for Games, AIoTA - Artificial Intelligence and IoT in Agriculture, AIL - Artificial Intelligence and Law, AIM - Artificial Intelligence in Medicine, AICPDES - Artificial Intelligence in Cyber-Physical and Distributed Embedded Systems, AIPES - Artificial Intelligence

in Power and Energy Systems, AITS - Artificial Intelligence in Transportation Systems, ALEA - Artificial Life and Evolutionary Algorithms, AmIA - Ambient Intelligence and Affective Environments, BAAI - Business Applications of Artificial Intelligence, GAI- General AI, IROBOT - Intelligent Robotics, KDBI - Knowledge Discovery and Business Intelligence, KRR - Knowledge Representation and Reasoning, MASTA - Multi-Agent Systems: Theory and Applications, SSM - Social Simulation and Modelling, TeMA - Text Mining and Applications.

This book offers a collection of high-quality peer-reviewed research papers presented at the Second International Conference on Communication and Computational Technologies (ICCCT 2019), held at Rajasthan Institute of Engineering and Technology, Jaipur, Rajasthan, India, on 30–31 August 2019. In contributions prepared by researchers from academia and industry alike, the book discusses a wide variety of industrial, engineering and scientific applications of emerging techniques.

This volume of Advances in Intelligent Systems and Computing contains accepted papers presented at ICGEC 2014, the 8th International Conference on Genetic and Evolutionary Computing. The conference this year was technically co-sponsored by Nanchang Institute of Technology in China, Kaohsiung University of Applied Science in Taiwan, and VSB-Technical University of Ostrava. ICGEC 2014 is held from 18-20 October 2014 in Nanchang, China. Nanchang is one of is the capital of Jiangxi Province in southeastern China, located in the north-central portion of the province. As it is bounded on the west by the Jiuling Mountains, and on the east by Poyang Lake, it is famous for its scenery, rich history and cultural sites. Because of its central location relative to the Yangtze and Pearl River Delta regions, it is a major railroad hub in Southern China. The conference is intended as an international forum for the researchers and professionals in all areas of genetic and evolutionary computing.

The two-volume set LNAI 10841 and LNAI 10842 constitutes the refereed proceedings of the 17th International Conference on Artificial Intelligence and Soft Computing, ICAISC 2018, held in Zakopane, Poland in June 2018. The 140 revised full papers presented were carefully reviewed and selected from 242 submissions. The papers included in the second volume are organized in the following five parts: computer vision, image and speech analysis; bioinformatics, biometrics, and medical applications; data mining; artificial intelligence in modeling, simulation and control; and various problems of artificial intelligence.

This book presents the application of new techniques in analyzing truss and frame structures. The book contains two main sections: Numerical Analysis of Structures and Mass-Saving in Structures. Under each section, different approaches on the topic are given. Covered in these sections are dynamic stability analysis, design optimization considering vibration, FEM analysis, topology optimization methods, and recommendations to build lightweight structures. It is believed that this book will be helpful to its readers for new perspectives on the analysis of structures.

The main goal of this book is to provide a state of the art of hybrid metaheuristics. The book provides a complete background that enables readers to design and implement hybrid metaheuristics to solve complex optimization problems (continuous/discrete, mono-objective/multi-objective, optimization under uncertainty) in a diverse range of application domains. Readers learn to solve large scale problems quickly and efficiently combining metaheuristics with complementary metaheuristics, mathematical programming, constraint programming and machine learning. Numerous real-world examples of problems and solutions

demonstrate how hybrid metaheuristics are applied in such fields as networks, logistics and transportation, bio-medical, engineering design, scheduling.

This volume of Advances in Intelligent and Soft Computing contains accepted papers presented at SOCO 2014, CISIS 2014 and ICEUTE 2014, all conferences held in the beautiful and historic city of Bilbao (Spain), in June 2014. Soft computing represents a collection or set of computational techniques in machine learning, computer science and some engineering disciplines, which investigate, simulate, and analyze very complex issues and phenomena. After a through peer-review process, the 9th SOCO 2014 International Program Committee selected 31 papers which are published in these conference proceedings. In this relevant edition a special emphasis was put on the organization of special sessions. One special session was organized related to relevant topics as: Soft Computing Methods in Manufacturing and Management Systems. The aim of the 7th CISIS 2014 conference is to offer a meeting opportunity for academic and industry-related researchers belonging to the various, vast communities of Computational Intelligence, Information Security, and Data Mining. The need for intelligent, flexible behaviour by large, complex systems, especially in mission-critical domains, is intended to be the catalyst and the aggregation stimulus for the overall event. After a through peer-review process, the CISIS 2014 International Program Committee selected 23 papers and the 5th ICEUTE 2014 International Program Committee selected 2 papers which are published in these conference proceedings as well.

This book constitutes the refereed proceedings of the 15th International Conference on Green, Pervasive, and Cloud Computing, GPC 2020, held in Xi'an, China, in November 2020. The 30 full papers presented in this book together with 8 short papers were carefully reviewed and selected from 96 submissions. They cover the following topics: Device-free Sensing; Machine Learning; Recommendation Systems; Urban Computing; Human Computer Interaction; Internet of Things and Edge Computing; Positioning; Applications of Computer Vision; CrowdSensing; and Cloud and Related Technologies.

Edited by professionals with years of experience, this book provides an introduction to the theory of evolutionary algorithms and single- and multi-objective optimization, and then goes on to discuss to explore applications of evolutionary algorithms for many uses with real-world applications. Covering both the theory and applications of evolutionary computation, the book offers exhaustive coverage of several topics on nontraditional evolutionary techniques, details working principles of new and popular evolutionary algorithms, and discusses case studies on both scientific and real-world applications of optimization

This book constitutes the proceedings of the 11th International Conference on Advances in Swarm Intelligence, ICSI 2020, held in July 2020 in Belgrade, Serbia. Due to the COVID-19 pandemic the conference was held virtually. The 63 papers included in this volume were carefully reviewed and selected from 127 submissions. The papers are organized in 12 cohesive topical sections as follows: Swarm intelligence and nature-inspired computing; swarm-based computing algorithms for optimization; particle swarm optimization; ant colony optimization; brain storm optimization algorithm; bacterial foraging optimization; genetic algorithm and evolutionary computation; multi-objective optimization; machine learning; data mining; multi-agent system and robotic swarm, and other applications.

Computational collective intelligence (CCI) is most often understood as a subfield of artificial intelligence (AI) dealing with soft computing methods that enable group decisions to be made or knowledge to be processed among autonomous units acting in distributed environments.

The needs for CCI techniques and tools have grown signi- cantly recently as many information systems work in distributed environments and use distributed resources. Web-based systems, social networks and multi-agent systems very often need these tools for working out consistent knowledge states, resolving conflicts and making decisions. Therefore, CCI is of great importance for today's and future distributed systems. Methodological, theoretical and practical aspects of computational collective int- ligence, such as group decision making, collective action coordination, and knowledge integration, are considered as the form of intelligence that emerges from the collabo- tion and competition of many individuals (artificial and/or natural). The application of multiple computational intelligence technologies such as fuzzy systems, evolutionary computation, neural systems, consensus theory, etc. , can support human and other collective intelligence and create new forms of CCI in natural and/or artificial s- tems.

This book comprises a selection of papers from IFSA 2007 on new methods and theories that contribute to the foundations of fuzzy logic and soft computing. These papers were selected from over 400 submissions and constitute an imp- tant contribution to the theory and applications of fuzzy logic and soft c- puting methodologies. Soft computing consists of several computing paradigms, including fuzzy logic, neural networks, genetic algorithms, and other techniques, which can be used to produce powerful intelligent systems for solving real-world problems. The papers of IFSA 2007 also make a contribution to this goal. This book is intended to be a major reference for scientists and engineers interested in applying new computational and mathematical tools to achieve intelligent solutions to complex problems. We consider that this book can also be used to get novel ideas for new lines of research, or to continue the lines of research proposed by the authors of the papers contained in the book. The book is divided into 14 main parts.Eachpart contains a set of papers on a common subject, so that the reader can ?nd similar papers grouped together. Some of these parts comprise the papers of organized sessions of IFSA 2007 and we thank the session organizers for their incredible job in forming these sessions with invited and regular paper submissions.

This two-volume set (CCIS 158 and CCIS 159) constitutes the refereed proceedings of the International Workshop on Computer Science for Environmental Engineering and EcoInformatics, CSEEE 2011, held in Kunming, China, in July 2011. The 150 revised full papers presented in both volumes were carefully reviewed and selected from a large number of submissions. The papers are organized in topical sections on computational intelligence; computer simulation; computing practices and applications; ecoinformatics; image processing information retrieval; pattern recognition; wireless communication and mobile computing; artificial intelligence and pattern classification; computer networks and Web; computer software, data handling and applications; data communications; data mining; data processing and simulation; information systems; knowledge data engineering; multimedia applications.

This book examines mechatronics and automatic control systems. The book covers important emerging topics in signal processing, control theory, sensors, mechanic manufacturing systems and automation. The book presents papers from the second International Conference on Mechatronics and Automatic Control Systems held in Beijing, China on September 20-21, 2014. Examines how to improve productivity through the latest advanced technologies Covering new systems and techniques in the broad field of mechatronics and automatic control systems

Soft computing and nature-inspired computing both play a significant role in developing a better understanding to machine learning. When studied together, they can offer new perspectives on the learning process of machines. The Handbook of Research on Soft Computing and Nature-Inspired Algorithms is an essential source for the latest scholarly research on applications of nature-inspired computing and soft computational systems. Featuring comprehensive coverage on a range of topics and perspectives such as swarm intelligence, speech

recognition, and electromagnetic problem solving, this publication is ideally designed for students, researchers, scholars, professionals, and practitioners seeking current research on the advanced workings of intelligence in computing systems.

This book introduces the latest international research in the fields of bioinformatics and computational biology. It includes various studies in the area of machine learning in bioinformatics, systems biology, omics data analysis and mining, biomedical applications and sequences, which were selected by an international committee and presented at the 12th International Conference on Practical Applications of Computational Biology & Bioinformatics held in Toledo in June 2018.

This volume comprises the select proceedings of the annual convention of the Computer Society of India. Divided into 10 topical volumes, the proceedings present papers on state-of-the-art research, surveys, and succinct reviews. The volumes cover diverse topics ranging from communications networks to big data analytics, and from system architecture to cyber security. This volume focuses on Sensors and Image Processing. The contents of this book will be useful to researchers and students alike.

This book and its companion volumes, LNCS volumes 9140, 9141 and 9142, constitute the proceedings of the 6th International Conference on Swarm Intelligence, ICSI 2015 held in conjunction with the Second BRICS Congress on Computational Intelligence, CCI 2015, held in Beijing, China in June 2015. The 161 revised full papers presented were carefully reviewed and selected from 294 submissions. The papers are organized in 28 cohesive sections covering all major topics of swarm intelligence and computational intelligence research and development, such as novel swarm-based optimization algorithms and applications; particle swarm opt8imization; ant colony optimization; artificial bee colony algorithms; evolutionary and genetic algorithms; differential evolution; brain storm optimization algorithm; biogeography based optimization; cuckoo search; hybrid methods; multi-objective optimization; multi-agent systems and swarm robotics; Neural networks and fuzzy methods; data mining approaches; information security; automation control; combinatorial optimization algorithms; scheduling and path planning; machine learning; blind sources separation; swarm interaction behavior; parameters and system optimization; neural networks; evolutionary and genetic algorithms; fuzzy systems; forecasting algorithms; classification; tracking analysis; simulation; image and texture analysis; dimension reduction; system optimization; segmentation and detection system; machine translation; virtual management and disaster analysis.

This book provides essential insights into a range of newly developed numerical optimization techniques with a view to solving real-world problems. Many of these problems can be modeled as nonlinear optimization problems, but due to their complex nature, it is not always possible to solve them using conventional optimization theory. Accordingly, the book discusses the design and applications of non-conventional numerical optimization techniques, including the design of benchmark functions and the implementation of these techniques to solve real-world optimization problems. The book's twenty chapters examine various interesting research topics in this area, including: Pi fraction-based optimization of the Pantoja–Bretones–Martin (PBM) antenna benchmarks; benchmark function generators for single-objective robust optimization algorithms; convergence of gravitational search algorithms on linear and quadratic functions; and an algorithm for the multi-variant evolutionary synthesis of nonlinear models with real-valued chromosomes. Delivering on its promise to explore real-world scenarios, the book also addresses the

seismic analysis of a multi-story building with optimized damper properties; the application of constrained spider monkey optimization to solve portfolio optimization problems; the effect of upper body motion on a bipedal robot's stability; an ant colony algorithm for routing alternate-fuel vehicles in multi-depot vehicle routing problems; enhanced fractal dimension-based feature extraction for thermal face recognition; and an artificial bee colony-based hyper-heuristic for the single machine order acceptance and scheduling problem. The book will benefit not only researchers, but also organizations active in such varied fields as Aerospace, Automotive, Biotechnology, Consumer Packaged Goods, Electronics, Finance, Business & Banking, Oil, Gas & Geosciences, and Pharma, to name a few.

This volume constitutes the refereed post-conference proceedings of the 11th International Conference on Simulation Tools and Techniques, SIMUTools 2019, held in Chengdu, China, in August 2019. The 97 revised full papers were carefully selected from 156 submissions. The papers focus on simulation methods, simulation techniques, simulation software, simulation performance, modeling formalisms, simulation verification and widely used frameworks.

This book gathers selected high-quality research papers presented at International Conference on Mobile Computing and Sustainable Informatics (ICMCSI 2021) organized by Pulchowk Campus, Institute of Engineering, Tribhuvan University, Nepal, during 29–30 January 2021. The book discusses recent developments in mobile communication technologies ranging from mobile edge computing devices, to personalized, embedded and sustainable applications. The book covers vital topics like mobile networks, computing models, algorithms, sustainable models and advanced informatics that supports the symbiosis of mobile computing and sustainable informatics.

The digital age is ripe with emerging advances and applications in technological innovations. Mimicking the structure of complex systems in nature can provide new ideas on how to organize mechanical and personal systems. The Handbook of Research on Modeling, Analysis, and Application of Nature-Inspired Metaheuristic Algorithms is an essential scholarly resource on current algorithms that have been inspired by the natural world. Featuring coverage on diverse topics such as cellular automata, simulated annealing, genetic programming, and differential evolution, this reference publication is ideal for scientists, biological engineers, academics, students, and researchers that are interested in discovering what models from nature influence the current technology-centric world.

This book gathers selected papers presented at the International Conference on Advancements in Computing and Management (ICACM 2019). Discussing current research in the field of artificial intelligence and machine learning, cloud computing, recent trends in security, natural language processing and machine translation, parallel and distributed algorithms, as well as pattern recognition and analysis, it is a valuable resource for academics, practitioners in industry and decision-makers.

Swarm intelligence algorithms are a form of nature-based optimization algorithms. Their main inspiration is the cooperative behavior of animals within specific communities. This can be described as simple behaviors of individuals along with the mechanisms for sharing knowledge between them, resulting in the complex behavior of the entire community. Examples of such

behavior can be found in ant colonies, bee swarms, schools of fish or bird flocks. Swarm intelligence algorithms are used to solve difficult optimization problems for which there are no exact solving methods or the use of such methods is impossible, e.g. due to unacceptable computational time. This set comprises two volumes: Swarm Intelligence Algorithms: A Tutorial and Swarm Intelligence Algorithms: Modifications and Applications. The first volume thoroughly presents the basics of 24 algorithms selected from the entire family of swarm intelligence algorithms. It contains a detailed explanation of how each algorithm works, along with relevant program codes in Matlab and the C ++ programming language, as well as numerical examples illustrating step-by-step how individual algorithms work. The second volume describes selected modifications of these algorithms and presents their practical applications. This book presents 24 swarm algorithms together with their modifications and practical applications. Each chapter is devoted to one algorithm. It contains a short description along with a pseudo-code showing the various stages of its operation. In addition, each chapter contains a description of selected modifications of the algorithm and shows how it can be used to solve a selected practical problem.

This book constitutes the proceedings of the 14th International Workshop on Knowledge Management and Acquisition for Intelligent Systems, PKAW 2016, held in Phuket, Thailand, in August 2016. The 16 full papers and 5 short papers included in this volume were carefully reviewed and selected from 61 initial submissions. They deal with knowledge acquisition and machine learning; knowledge acquisition and natural language processing; knowledge acquisition from network and big data; and knowledge acquisition and applications.

This book presents the proceedings of SympoSIMM 2020, the 3rd edition of the Symposium on Intelligent Manufacturing and Mechatronics. Focusing on "Strengthening Innovations Towards Industry 4.0", the book presents studies on the details of Industry 4.0's current trends. Divided into five parts covering various areas of manufacturing engineering and mechatronics stream, namely, artificial intelligence, instrumentation and controls, intelligent manufacturing, modelling and simulation, and robotics, the book will be a valuable resource for readers wishing to embrace the new era of Industry 4.0. This two-volume set LNCS 10954 and LNCS 10955 constitutes - in conjunction with the volume LNAI 10956 - the refereed proceedings of the 14th International Conference on Intelligent Computing, ICIC 2018, held in Wuhan, China, in August 2018. The 275 full papers and 72 short papers of the three proceedings volumes were carefully reviewed and selected from 632 submissions. The papers are organized in topical sections such as Neural Networks.- Pattern Recognition.- Image Processing.- Intelligent Computing in Robotics.- Intelligent Control and Automation.- Intelligent Data Analysis and Prediction.- Fuzzy Theory and Algorithms.- Supervised Learning.- Unsupervised Learning.- Kernel Methods and Supporting Vector Machines.- Knowledge Discovery and Data Mining.- Natural Language Processing and Computational Linguistics.- Gene Expression Array Analysis.- Systems Biology.- Computational Genomics.- Computational Proteomics.- Gene Regulation Modeling and Analysis.- Protein-Protein Interaction Prediction.- Next-Gen

Sequencing and Metagenomics.- Structure Prediction and Folding.- Evolutionary Optimization for Scheduling.- High-Throughput Biomedical Data Integration and Mining.- Machine Learning Algorithms and Applications.- Heuristic Optimization Algorithms for Real-World Applications.- Evolutionary Multi-Objective Optimization and Its Applications.- Swarm Evolutionary Algorithms for Scheduling and Combinatorial.- Optimization.- Swarm Intelligence and Applications in Combinatorial Optimization.- Advances in Metaheuristic Optimization Algorithm.- Advances in Image Processing and Pattern Recognition Techniques.- AI in Biomedicine.- Bioinformatics.- Biometrics Recognition.- Information Security.- Virtual Reality and Human-Computer Interaction.- Healthcare Informatics Theory and Methods.- Intelligent Computing in Computer Vision.- Intelligent Agent and Web Applications.- Reinforcement Learning.- Machine Learning.- Modeling, Simulation, and Optimization of Biological Systems.- Biomedical Data Modeling and Mining.- Cheminformatics.- Intelligent Computing in Computational Biology.- Protein Structure and Function Prediction.- Biomarker Discovery.- Hybrid Computational Intelligence: Theory and Application in Bioinformatics, Computational Biology and Systems Biology.- IoT and Smart Data.- Intelligent Systems and Applications for Bioengineering.- Evolutionary Optimization: Foundations and Its Applications to Intelligent Data Analytics.- Protein and Gene Bioinformatics: Analysis, Algorithms and Applications.

The two-volume set CCIS 827 and 828 constitutes the thoroughly refereed proceedings of the Third International Conference on Next Generation Computing Technologies, NGCT 2017, held in Dehradun, India, in October 2017. The 135 full papers presented were carefully reviewed and selected from 948 submissions. There were organized in topical sections named: Smart and Innovative Trends in Communication Protocols and Standards; Smart and Innovative Trends in Computational Intelligence and Data Science; Smart and Innovative Trends in Image Processing and Machine Vision; Smart Innovative Trends in Natural Language Processing for Indian Languages; Smart Innovative Trends in Security and Privacy.

This proceeding book contains a collection of selected accepted papers of the Mendel conference held in Brno, Czech Republic in June 2016. The proceedings book contains three chapters which present recent advances in soft computing including intelligent image processing. The Mendel conference was established in 1995 and is named after the scientist and Augustinian priest Gregor J. Mendel who discovered the famous Laws of Heredity. The main aim of the conference is to create a regular possibility for students, academics and researchers to exchange ideas and novel research methods on a yearly basis.

This book engages in an ongoing topic, such as the implementation of nature-inspired metaheuristic algorithms, with a main concentration on optimization problems in different fields of engineering optimization applications. The chapters of

the book provide concise overviews of various nature-inspired metaheuristic algorithms, defining their profits in obtaining the optimal solutions of tiresome engineering design problems that cannot be efficiently resolved via conventional mathematical-based techniques. Thus, the chapters report on advanced studies on the applications of not only the traditional, but also the contemporary certain nature-inspired metaheuristic algorithms to specific engineering optimization problems with single and multi-objectives. Harmony search, artificial bee colony, teaching learning-based optimization, electrostatic discharge, grasshopper, backtracking search, and interactive search are just some of the methods exhibited and consulted step by step in application contexts. The book is a perfect guide for graduate students, researchers, academicians, and professionals willing to use metaheuristic algorithms in engineering optimization applications.
This book is a collection of peer-reviewed best-selected research papers presented at 4th International Conference on Computer Networks and Inventive Communication Technologies (ICCNCT 2021). The book covers new results in theory, methodology, and applications of computer networks and data communications. It includes original papers on computer networks, network protocols and wireless networks, data communication technologies, and network security. The proceedings of this conference are a valuable resource, dealing with both the important core and the specialized issues in the areas of next-generation wireless network design, control, and management, as well as in the areas of protection, assurance, and trust in information security practice. It is a reference for researchers, instructors, students, scientists, engineers, managers, and industry practitioners for advanced work in the area.
Nature-Inspired Optimization Algorithms provides a systematic introduction to all major nature-inspired algorithms for optimization. The book's unified approach, balancing algorithm introduction, theoretical background and practical implementation, complements extensive literature with well-chosen case studies to illustrate how these algorithms work. Topics include particle swarm optimization, ant and bee algorithms, simulated annealing, cuckoo search, firefly algorithm, bat algorithm, flower algorithm, harmony search, algorithm analysis, constraint handling, hybrid methods, parameter tuning and control, as well as multi-objective optimization. This book can serve as an introductory book for graduates, doctoral students and lecturers in computer science, engineering and natural sciences. It can also serve a source of inspiration for new applications. Researchers and engineers as well as experienced experts will also find it a handy reference. Discusses and summarizes the latest developments in nature-inspired algorithms with comprehensive, timely literature Provides a theoretical understanding as well as practical implementation hints Provides a step-by-step introduction to each algorithm
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