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# Lion Optimization Algorithm Loa A Nature Inspired

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Artificial Intelligence Applications for Smart Societies

Innovations in Bio-Inspired Computing and Applications

Recent Advances in Natural Computing and Biomedical Applications

Nature-Inspired Computing and Optimization

A Swarm Intelligent Approach to Reinventing Organisations

Cognitive and Soft Computing Techniques for the Analysis of Healthcare Data

Proceedings of ICICC 2019, Volume 1

Intelligent and Cloud Computing

Proceedings of ICSICCS 2020

Hybrid Intelligence for Social Networks

11th International Conference, ICCCI 2019, Hendaye, France, September 4-6, 2019, Proceedings, Part I

Nature-Inspired Optimization Algorithms

Proceedings of ICSCN 2021

Applications of Soft Computing for the Web

Proceedings of the 11th International Conference on Innovations in Bio-Inspired Computing and Applications (IBICA 2020) held during December 16-18, 2020

Nature-inspired Methods for Stochastic, Robust and Dynamic Optimization

New Materials in Civil Engineering

Swarm Intelligence for Cloud Computing

Future Impact and Well-Being for Society 5.0

Mobile Radio Communications and 5G Networks

Recent Advances

Communication and Intelligent Systems

SocProS 2017, Volume 1

19th International Conference, ICAISC 2020, Zakopane, Poland, October 12-14, 2020, Proceedings, Part I

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## **MCDANIEL MOONEY**

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Artificial Intelligence Applications for  
Smart Societies Springer

This book gathers recent research works in emerging Artificial Intelligence (AI) methods for the convergence of communication, caching, control, and computing resources in cloud-based Internet of Vehicles (IoV) infrastructures. In this context, the book's major subjects

cover the analysis and the development of AI-powered mechanisms in future IoV applications and architectures. It addresses the major new technological developments in the field and reflects current research trends and industry needs. It comprises a good balance between theoretical and practical issues, covering case studies, experience and evaluation reports, and best practices in utilizing AI applications in IoV networks. It also provides technical/scientific information about various aspects of AI technologies, ranging from basic concepts

to research-grade material, including future directions. This book is intended for researchers, practitioners, engineers, and scientists involved in designing and developing protocols and AI applications and services for IoV-related devices.

**Innovations in Bio-Inspired  
Computing and Applications** CRC Press

This book constitutes best selected research papers presented at the International Applied Soft Computing and Communication Networks (ACN 2019) held in Trivandrum, Kerala, India during December 18 - 21, 2019. The papers are

organized in topical sections on real time and multimedia communications, security and privacy, network management and software-defined networks, Internet of Things (IoT) and cyber-physical systems, intelligent distributed systems, mobile computing and vehicle communications, surveillance networks and visual intelligence, and emerging topics. The book is a reference for researchers and scientists engaged in various fields of intelligent systems.

### **Recent Advances in Natural Computing and Biomedical Applications**

Springer Nature  
Cognitive and Soft Computing Techniques for the Analysis of Healthcare Data discusses the insight of data processing applications in various domains through soft computing techniques and enormous advancements in the field. The book focuses on the cross-disciplinary mechanisms and ground-breaking research ideas on novel techniques and data processing approaches in handling structured and unstructured healthcare data. It also gives insight into various information-processing models and many memories associated with it while

processing the information for forecasting future trends and decision making. This book is an excellent resource for researchers and professionals who work in the Healthcare Industry, Data Science, and Machine learning. Focuses on data-centric operations in the Healthcare industry Provides the latest trends in healthcare data analytics and practical implementation outcomes of the proposed models Addresses real-time challenges and case studies in the Healthcare industry

### Nature-Inspired Computing and Optimization CRC Press

This book highlights recent research advances in unsupervised learning using natural computing techniques such as artificial neural networks, evolutionary algorithms, swarm intelligence, artificial immune systems, artificial life, quantum computing, DNA computing, and others. The book also includes information on the use of natural computing techniques for unsupervised learning tasks. It features several trending topics, such as big data scalability, wireless network analysis, engineering optimization, social media, and complex network analytics. It shows

how these applications have triggered a number of new natural computing techniques to improve the performance of unsupervised learning methods. With this book, the readers can easily capture new advances in this area with systematic understanding of the scope in depth. Readers can rapidly explore new methods and new applications at the junction between natural computing and unsupervised learning. Includes advances on unsupervised learning using natural computing techniques Reports on topics in emerging areas such as evolutionary multi-objective unsupervised learning Features natural computing techniques such as evolutionary multi-objective algorithms and many-objective swarm intelligence algorithms  
*A Swarm Intelligent Approach to Reinventing Organisations* BoD – Books on Demand

This book provides a comprehensive, conceptual, and detailed overview of the wide range of applications of Artificial Intelligence, Machine Learning, and Data Science and how these technologies have an impact on various domains such as healthcare, business, industry, security,

and how all countries around the world are feeling this impact. The book aims at low-cost solutions which could be implemented even in developing countries. It highlights the significant impact these technologies have on various industries and on us as humans. It provides a virtual picture of forthcoming better human life shadowed by the new technologies and their applications and discusses the impact Data Science has on business applications. The book will also include an overview of the different AI applications and their correlation between each other. The audience is graduate and postgraduate students, researchers, academicians, institutions, and professionals who are interested in exploring key technologies like Artificial Intelligence, Machine Learning, and Data Science.

*Cognitive and Soft Computing Techniques for the Analysis of Healthcare Data*  
Springer Nature

This book is a collection of the most recent approaches that combine metaheuristics and machine learning. Some of the methods considered in this book are evolutionary, swarm, machine learning, and deep learning. The chapters were

classified based on the content; then, the sections are thematic. Different applications and implementations are included; in this sense, the book provides theory and practical content with novel machine learning and metaheuristic algorithms. The chapters were compiled using a scientific perspective. Accordingly, the book is primarily intended for undergraduate and postgraduate students of Science, Engineering, and Computational Mathematics and is useful in courses on Artificial Intelligence, Advanced Machine Learning, among others. Likewise, the book is useful for research from the evolutionary computation, artificial intelligence, and image processing communities.

**Proceedings of ICICC 2019, Volume 1**  
Springer

This book addresses the frontier advances in the theory and application of nature-inspired optimization techniques, including solving the quadratic assignment problem, prediction in nature-inspired dynamic optimization, the lion algorithm and its applications, optimizing the operation scheduling of microgrids, PID controllers for two-legged robots, optimizing crane

operating times, planning electrical energy distribution systems, automatic design and evaluation of classification pipelines, and optimizing wind-energy power generation plants. The book also presents a variety of nature-inspired methods and illustrates methods of adapting these to said applications. Nature-inspired computation, developed by mimicking natural phenomena, makes a significant contribution toward the solution of non-convex optimization problems that normal mathematical optimizers fail to solve. As such, a wide range of nature-inspired computing approaches has been used in multidisciplinary engineering applications. Written by researchers and developers from a variety of fields, this book presents the latest findings, novel techniques and pioneering applications.

Intelligent and Cloud Computing Springer  
Internet of Things (IoT) is a new platform of various physical objects or “things” equipped with sensors, electronics, smart devices, software, and network connections. IoT represents a new revolution of the Internet network which is driven by the recent advances of technologies such as sensor networks

(wearable and implantable), mobile devices, networking, and cloud computing technologies. IoT permits these the smart devices to collect, store and analyze the collected data with limited storage and processing capacities. Swarm Intelligence for Resource Management in the Internet of Things presents a new approach in Artificial Intelligence that can be used for resources management in IoT, which is considered a critical issue for this network. The authors demonstrate these resource management applications using swarm intelligence techniques. Currently, IoT can be used in many important applications which include healthcare, smart cities, smart homes, smart hospitals, environment monitoring, and video surveillance. IoT devices cannot perform complex on-site data processing due to their limited battery and processing. However, the major processing unit of an application can be transmitted to other nodes, which are more powerful in terms of storage and processing. By applying swarm intelligence algorithms for IoT devices, we can provide major advantages for energy saving in IoT devices. Swarm Intelligence for Resource Management in

the Internet of Things shows the reader how to overcome the problems and challenges of creating and implementing swarm intelligence algorithms for each application Examines the development and application of swarm intelligence systems in artificial intelligence as applied to the Internet of Things Discusses intelligent techniques for the implementation of swarm intelligence in IoT Prepared for researchers and specialists who are interested in the use and integration of IoT and cloud computing technologies

**Proceedings of ICSICCS 2020** Springer Nature

This book contains research contributions from leading global scholars in nature-inspired computing. It includes comprehensive coverage of each respective topic, while also highlighting recent and future trends. The contributions provides readers with a snapshot of the state of the art in the field of nature-inspired computing and its application. This book has focus on the current researches while highlighting the empirical results along with theoretical concepts to provide a comprehensive

reference for students, researchers, scholars, professionals and practitioners in the field of Advanced Artificial Intelligence, Nature-Inspired Algorithms and Soft Computing.

*Hybrid Intelligence for Social Networks*  
Springer Nature

This book discusses the applications of different soft computing techniques for the web-based systems and services. The respective chapters highlight recent developments in the field of soft computing applications, from web-based information retrieval to online marketing and online healthcare. In each chapter author endeavor to explain the basic ideas behind the proposed applications in an accessible format for readers who may not possess a background in these fields. This carefully edited book covers a wide range of new applications of soft computing techniques in Web recommender systems, Online documents classification, Online documents summarization, Online document clustering, Online market intelligence, Web usage profiling, Web data extraction, Social network extraction, Question answering systems, Online health care, Web knowledge management,

Multimedia information retrieval, Navigation guides, User profiles extraction, Web-based distributed information systems, Web security applications, Internet of Things Applications and so on. The book is aimed for researchers and practitioner who are engaged in developing and applying intelligent systems principles for solving real-life problems. Further, it has been structured so that each chapter can be read independently of the others.

*11th International Conference, ICCCI 2019, Hendaye, France, September 4-6, 2019, Proceedings, Part I* Springer

This book explains aspects of social networks, varying from development and application of new artificial intelligence and computational intelligence techniques for social networks to understanding the impact of social networks. Chapters 1 and 2 deal with the basic strategies towards social networks such as mining text from such networks and applying social network metrics using a hybrid approach; Chaps. 3 to 8 focus on the prime research areas in social networks: community detection, influence maximization and opinion mining. Chapter 9 to 13 concentrate on

studying the impact and use of social networks in society, primarily in education, commerce, and crowd sourcing. The contributions provide a multidimensional approach, and the book will serve graduate students and researchers as a reference in computer science, electronics engineering, communications, and information technology.

Springer

This two-volume set (LNAI 11683 and LNAI 11684) constitutes the refereed proceedings of the 11th International Conference on Computational Collective Intelligence, ICCCI 2019, held in Hendaye France, in September 2019. The 117 full papers presented were carefully reviewed and selected from 204 submissions. The papers are grouped in topical sections on: knowledge engineering and semantic web; social networks and recommender systems; text processing and information retrieval; data mining methods and applications; computer vision techniques; decision support and control systems; cooperative strategies for decision making and optimization; intelligent modeling and simulation approaches for real world systems; and innovations in intelligent

systems.

Nature-Inspired Optimization Algorithms  
Academic Press

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.

**Proceedings of ICSCN 2021** Academic Press

This book highlights recent research on bio-inspired computing and its various innovative applications in information and communication technologies. It presents 51 high-quality papers from the 11th International Conference on Innovations in Bio-Inspired Computing and Applications (IBICA 2020) and 10th World Congress on Information and Communication

Technologies (WICT 2020), which was held online during December 16–18, 2019. As a premier conference, IBICA–WICT brings together researchers, engineers and practitioners whose work involves bio-inspired computing, computational intelligence and their applications in information security, real-world contexts, etc. Including contributions by authors from 25 countries, the book offers a valuable reference guide for all researchers, students and practitioners in the fields of Computer Science and Engineering.

Applications of Soft Computing for the Web Springer Nature

This volume discusses recent advances in Artificial Intelligence (AI) applications in smart, internet-connected societies, highlighting three key focus areas. The first focus is on intelligent sensing applications. This section details the integration of Wireless Sensing Networks (WSN) and the use of intelligent platforms for WSN applications in urban infrastructures, and discusses AI techniques on hardware and software systems such as machine learning, pattern recognition, expert systems, neural

networks, genetic algorithms, and intelligent control in transportation and communications systems. The second focus is on AI-based Internet of Things (IoT) systems, which addresses applications in traffic management, medical health, smart homes and energy. Readers will also learn about how AI can extract useful information from Big Data in IoT systems. The third focus is on crowdsourcing (CS) and computing for smart cities. This section discusses how CS via GPS devices, GIS tools, traffic cameras, smart cards, smart phones and road deceleration devices enables citizens to collect and share data to make cities smart, and how these data can be applied to address urban issues including pollution, traffic congestion, public safety and increased energy consumption. This book will be of interest to academics, researchers and students studying AI, cloud computing, IoT and crowdsourcing in urban applications.

Proceedings of the 11th International Conference on Innovations in Bio-Inspired Computing and Applications (IBICA 2020) held during December 16-18, 2020 Elsevier



his two-volume set LNCS 12689-12690 constitutes the refereed proceedings of the 12th International Conference on Advances in Swarm Intelligence, ICSI 2021, held in Qingdao, China, in July 2021. The 104 full papers presented in this volume were carefully reviewed and selected from 177 submissions. They cover topics such as: Swarm Intelligence and Nature-Inspired Computing; Swarm-based Computing Algorithms for Optimization; Particle Swarm Optimization; Ant Colony Optimization; Differential Evolution; Genetic Algorithm and Evolutionary Computation; Fireworks Algorithms; Brain Storm Optimization Algorithm; Bacterial Foraging Optimization Algorithm; DNA Computing Methods; Multi-Objective Optimization; Swarm Robotics and Multi-Agent System; UAV Cooperation and Control; Machine Learning; Data Mining; and Other Applications. *Nature-inspired Methods for Stochastic, Robust and Dynamic Optimization* Walter de Gruyter GmbH & Co KG  
Cognitive Big Data Intelligence with a Metaheuristic Approach presents an exact and compact organization of content relating to the latest metaheuristics

methodologies based on new challenging big data application domains and cognitive computing. The combined model of cognitive big data intelligence with metaheuristics methods can be used to analyze emerging patterns, spot business opportunities, and take care of critical process-centric issues in real-time. Various real-time case studies and implemented works are discussed in this book for better understanding and additional clarity. This book presents an essential platform for the use of cognitive technology in the field of Data Science. It covers metaheuristic methodologies that can be successful in a wide variety of problem settings in big data frameworks. Provides a unique opportunity to present the work on the state-of-the-art of metaheuristics approach in the area of big data processing developing automated and intelligent models Explains different, feasible applications and case studies where cognitive computing can be successfully implemented in big data analytics using metaheuristics algorithms Provides a snapshot of the latest advances in the contribution of metaheuristics frameworks in cognitive big data

applications to solve optimization problems

**New Materials in Civil Engineering**  
Springer Nature

This is a monumental reference for the theory and practice of computer security. Comprehensive in scope, this text covers applied and practical elements, theory, and the reasons for the design of applications and security techniques. It covers both the management and the engineering issues of computer security. It provides excellent examples of ideas and mechanisms that demonstrate how disparate techniques and principles are combined in widely-used systems. This book is acclaimed for its scope, clear and lucid writing, and its combination of formal and theoretical aspects with real systems, technologies, techniques, and policies. *Swarm Intelligence for Cloud Computing*  
Springer Nature

This book includes high-quality research papers presented at 3rd International Conference on Sustainable Communication Networks and Applications (ICSCN 2021), which is held at Surya Engineering College (SEC), Erode, India, during 29-30 July 2021. This book includes novel and state-



of-the-art research discussions that articulate and report all research aspects, including theoretical and experimental prototypes and applications that incorporate sustainability into emerging applications. The book discusses and articulates emerging challenges in significantly reducing the energy consumption of communication systems and also explains development of a sustainable and energy-efficient mobile and wireless communication network. It includes best selected high-quality

conference papers in different fields such as Internet of Things, cloud computing, data mining, artificial intelligence, machine learning, autonomous systems, deep learning, neural networks, renewable energy sources, sustainable wireless communication networks, QoS, network sustainability, and many other related areas.

**Future Impact and Well-Being for Society 5.0** John Wiley & Sons

This book presents select proceedings of the International Conference on Intelligent

Automation and Soft Computing (IASC2021). Various topics covered in this book include AI algorithm, neural networks, pattern recognition, machine learning, blockchain technology, system engineering, computer vision and image processing, adaptive control and robotics, big data and data processing, networking and security. The book is a valuable reference for beginners, researchers, and professionals interested in artificial intelligence, automation, and soft computing.

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