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**Particle Swarm Optimization** - Alex Lazinica  
- 2009-01-01  
Particle swarm optimization (PSO) is a population based stochastic optimization technique influenced by the social behavior of bird flocking or fish schooling. PSO shares many similarities with evolutionary computation techniques such as Genetic Algorithms (GA). The system is initialized with a population of random solutions and searches for optima by updating generations. However, unlike GA, PSO has no evolution operators such as crossover and mutation. In PSO, the potential solutions, called particles, fly through
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Modeling Medical Doctor Rostering Using Hybrid Genetic Algorithm-particle Swarm Optimization - Zanariah Zainudin - 2014

Evolutionary Programming VII - V.W. Porto - 2006-04-11
This book constitutes the thoroughly refereed post-conference proceedings of the 7th International Conference on Evolutionary Programming, EP98, held in San Diego, CA, USA, in March 1998. The volume presents 81 revised full papers selected from an overwhelming number of submissions. The papers are organized in topical sections on economics, emergence and complex systems; issues and innovations in evolutionary computation; applications; evolution-based approaches to
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Advances of Computational Intelligence in Industrial Systems - Ying Liu - 2008-05-30
Computational Intelligence (CI) has emerged as a rapidly growing field over the past decade. This volume reports the exploration of CI frontiers with an emphasis on a broad spectrum of real-world applications. Such a collection of chapters has presented the state-of-the-art of CI applications in industry and will be an essential resource for professionals and researchers who wish to learn and spot the opportunities in applying CI techniques to their particular problems.
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Focus on Ant and Particle believe these 27 chapters presented in this book adequately reflect these topics.

**Swarm Intelligence** - Felix Chan - 2007-12-01

In the era globalisation the emerging technologies are governing engineering industries to a multifaceted state. The escalating complexity has demanded researchers to find the possible ways of easing the solution of the problems. This has motivated the researchers to grasp ideas from the nature and implant it in the engineering sciences. This way of thinking led to emergence of many biologically inspired algorithms that have proven to be efficient in handling the computationally complex problems with competence such as Genetic Algorithm (GA), Ant Colony Optimization (ACO), Particle Swarm Optimization (PSO), etc. Motivated by the capability of the biologically inspired algorithms the present book on "Swarm Intelligence: Swarm Optimization" aims to present recent developments and applications concerning optimization with swarm intelligence techniques. The papers selected for this book comprise a cross-section of topics that reflect a variety of perspectives and disciplinary backgrounds. In addition to the introduction of new concepts of swarm intelligence, this book also presented some selected representative case studies covering power plant maintenance scheduling; geotechnical engineering; design and machining tolerances; layout problems; manufacturing process plan; job-shop scheduling; structural design; environmental dispatching problems; wireless communication; water distribution systems; multi-plant supply chain; fault diagnosis of airplane engines; and process scheduling. I believe these 27 chapters presented in this book adequately reflect these topics.
Advances in machine learning techniques and ever-increasing computing power has helped create a new generation of hardware and software technologies with practical applications for nearly every industry. As the progress has, in turn, excited the interest of venture investors, technology firms, and a growing number of clients, implementing intelligent automation in both physical and information systems has become a must in Hybrid Algorithms of Microbial Genetic Algorithm and Particle Swarm Optimization for Automatic Learning Groups Composition - Nicholas Simeon Dienagha - 2019

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Handbook of Research on Smart Technology Models for Business and Industry - Thomas, J. Joshua - 2020-06-19

Handbook of Research on Smart Technology Models for Business and Industry is an essential reference source that discusses relevant abstract frameworks and the latest experimental research findings in theory, mathematical models, software applications, and prototypes in the area of smart technologies. Featuring research on topics such as digital security, renewable energy, and intelligence management, this book is ideally designed for machine learning specialists, industrial experts, data scientists, researchers, academicians, students, and business professionals seeking coverage on current smart technology models.

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**Advances in Swarm Intelligence, Part I** - Ying Tan - 2011-05-31
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**Evolutionary Computation** - Xin Yao - 1999
Evolutionary computation is the study of computational systems which use ideas and get inspiration from natural evolution and adaptation. This book is devoted to the theory and application of evolutionary computation. It is a self-contained volume which covers both introductory material and selected advanced topics. The
and application of into two major parts: the introductory one and the one on selected advanced topics. Each part consists of several chapters which present an in-depth discussion of selected topics. A strong connection is established between evolutionary algorithms and traditional search algorithms. This connection enables us to incorporate ideas in more established fields into evolutionary algorithms. The book is aimed at a wide range of readers. It does not require previous exposure to the field since introductory material is included. It will be of interest to anyone who is interested in adaptive optimization and learning. People in computer science, artificial intelligence, operations research, and various engineering fields will find it particularly interesting.

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**Particle Swarm Optimization with**
This book is intended to gather recent studies on particle swarm optimization (PSO). In this book, readers can find the recent theoretical developments and applications on PSO algorithm. From the theoretical aspect, PSO has preserved its popularity because of the fast convergence rate, and a lot of hybrid algorithms have recently been developed in order to increase the performance of the algorithm. At the same time, PSO has also been used to solve different kinds of engineering optimization problems. In this book, a reader can find engineering applications of PSO, such as environmental economic dispatch and grid computing.

**Particle Swarm Optimization** - Maurice Clerc - 2013-03-04
This is the first book devoted entirely to Particle Swarm Optimization (PSO), which is a non-specific algorithm, similar to evolutionary algorithms, such as taboo search and ant colonies. Since its original development in 1995, PSO has mainly been applied to continuous-discrete
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**Advances in Swarm Intelligence** - Ying Tan - 2017-07-18
The two-volume set of LNCS 10385 and 10386, constitutes the proceedings of the 8th Advances in Swarm Intelligence, ICSI 2017, held in Fukuoka, Japan, in July/August 2017. The total of 133 papers presented in these volumes was carefully reviewed and selected from 267 submissions. The papers were organized in topical sections as follows: Part I: theories and models of swarm intelligence; novel swarm-based optimization algorithms; particle swarm optimization; applications of particle swarm optimization; ant colony optimization; artificial bee colony algorithms; genetic algorithms; differential evolution; fireworks algorithm; brain storm optimization algorithm; cuckoo search; and firefly algorithm. Part II: multi-objective optimization; portfolio optimization; community detection; multi-agent systems and swarm robotics; hybrid optimization algorithms and applications; fuzzy and swarm approach; clustering and forecast; classification and detection; planning and routing.
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**Comparative Study Between Genetic Algorithm, simulated Annealing and Particle Swarm Optimization** - Ahmad Muzakkir Ayob - 2013

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Evolutionary Optimization Algorithms - Dan Simon - 2013-06-13
A clear and lucid bottom-up approach to the basic principles of evolutionary algorithms. Evolutionary algorithms (EAs) are a type of artificial intelligence. EAs are motivated by optimization processes that we observe in nature, such as natural selection, species migration, bird swarms, human culture, and ant colonies. This book discusses the theory, history, mathematics, and programming of evolutionary optimization algorithms. Featured algorithms include genetic algorithms, genetic programming, ant colony optimization, particle swarm optimization, evolutionary algorithms, biogeography-based optimization, and many others. Evolutionary Optimization Algorithms: Provides a straightforward, bottom-up approach that assists the reader in obtaining a clear—but theoretically rigorous—understanding of evolutionary algorithms, with an emphasis on implementation. Gives a careful treatment of recently developed EAs—including opposition-based learning, artificial fish swarms, bacterial foraging, and many others—and discusses their similarities and differences from more well-established EAs. Includes chapter-end problems plus a solutions manual available online for instructors. Offers simple examples that provide the reader with an intuitive understanding of the theory. Features source code for the examples available on the author's website. Provides advanced mathematical techniques for analyzing EAs, including Markov.
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for fortran, basic, and cobol modeling and dynamic system modeling Evolutionary Optimization Algorithms: Biologically Inspired and Population-Based Approaches to Computer Intelligence is an ideal text for advanced undergraduate students, graduate students, and professionals involved in engineering and computer science.


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**Search and Optimization by Metaheuristics** - Ke-Lin Du - 2016-07-20

This textbook provides a comprehensive introduction to nature-inspired metaheuristic methods for search and optimization, including the latest trends in evolutionary algorithms and other forms of natural computing. Over 100 different types of these methods are discussed in detail. The authors emphasize non-standard optimization problems and utilize a natural approach to the topic, moving from basic notions to more complex ones. An introductory chapter covers the necessary biological and mathematical backgrounds for understanding the main material. Subsequent chapters then explore almost all of the major metaheuristics for search and optimization created based on natural phenomena, including simulated annealing, recurrent neural networks, genetic programming, differential evolution, memetic algorithms, particle swarm optimization, artificial immune systems, ant colony optimization, tabu search and scatter search, bee and bacteria foraging algorithms, harmony search, biomolecular computing, quantum computing, and many others. General topics on dynamic, multimodal, constrained, and multiobjective optimizations are also described. Each chapter includes detailed flowcharts that illustrate specific algorithms and exercises that reinforce important topics. Introduced in the appendix are some benchmarks for the evaluation of metaheuristics. Search and Optimization by Metaheuristics is intended primarily as a textbook for graduate and advanced undergraduate students specializing in engineering and computer science. It will also serve as a valuable resource for scientists and researchers working in these areas, as well as those who are interested in search and
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Optimization - Omid Bozorg-Haddad - 2017-10-09
Overview of optimization -- Introduction to meta-heuristic and evolutionary algorithms -- Pattern search (PS) -- Genetic algorithm (GA) -- Simulated annealing (SA) -- Tabu search (TS) -- Ant colony optimization (ACO) -- Particle swarm optimization (PSO) -- Differential evolution (DE) -- Harmony search (HS) -- Shuffled frog-leaping algorithm (SFLA) -- Honey-bee mating optimization (HBMO) -- Invasive weed optimization (IWO) -- Central force optimization (CFO) -- Biogeography-based optimization (BBO) -- Firefly algorithm (FA) -- Gravity search algorithm (GSA) -- Bat algorithm (BA) -- Plant propagation algorithm (PPA) -- Water cycle algorithm (WCA) -- Symbiotic organisms search (SOS) -- Comprehensive evolutionary algorithm (CEA)

Meta-heuristic and Evolutionary Algorithms for Engineering

Applying Particle Swarm Optimization - Burcu Adigüzel Mercangöz - 2021-05-13
This book explains the theoretical structure of
optimization. (PSO) and focuses on the application of PSO to portfolio optimization problems. The general goal of portfolio optimization is to find a solution that provides the highest expected return at each level of portfolio risk. According to H. Markowitz’s portfolio selection theory, as new assets are added to an investment portfolio, the total risk of the portfolio’s decreases depending on the correlations of asset returns, while the expected return on the portfolio represents the weighted average of the expected returns for each asset. The book explains PSO in detail and demonstrates how to implement Markowitz’s portfolio optimization approach using PSO. In addition, it expands on the Markowitz model and seeks to improve the solution-finding process with the aid of various algorithms. In short, the book provides researchers, teachers, engineers, managers and practitioners with many tools they need to apply the PSO technique to portfolio

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**Evolutionary and Swarm Intelligence Algorithms** - Jagdish Chand Bansal - 2018-06-06
This book is a delight for academics, researchers and professionals working in evolutionary and swarm computing, computational intelligence, machine learning and engineering design, as well as search and optimization in general. It provides an introduction to the design and development of a number of popular and recent swarm and evolutionary algorithms with a focus on their applications in engineering problems in diverse domains. The topics discussed include particle swarm optimization, the artificial bee colony algorithm, Spider Monkey optimization algorithm, constrained multi-objective evolutionary algorithms, genetic programming, and evolutionary fuzzy systems. A friendly and informative treatment of the topics makes this book an ideal reference for beginners and those with experience alike.

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**Multilayer Perceptron with Genetic Algorithm and Particle Swarm Optimization for Well Log Data Inversion** - Ming-Che Huang - 2013

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**Metaheuristics for Dynamic Optimization** - Enrique Alba - 2012-08-11

This book is an updated effort in summarizing the trending topics and new hot research lines in solving dynamic problems using metaheuristics. An analysis of the present state in solving draws a clear picture: problems that change in time, having noise and uncertainties in their definition are becoming very important. The tools to face these problems are still to be built, since existing techniques are either slow or inefficient in tracking the many global optima that those problems are presenting to the solver technique. Thus, this book is devoted to include several of the most important advances in solving dynamic problems. Metaheuristics are the more popular tools to this end, and then we can find in the book how to best use genetic algorithms, particle swarm, ant colonies, immune systems, variable neighborhood search, and many other bioinspired techniques. Also, neural network solutions are considered in this book. Both, theory and practice have been addressed in the chapters of the book. Mathematical background and methodological tools in solving this new class of problems and applications are
the present state in solving applications point of view, not just academic benchmarks are dealt with, but also real world applications in logistics and bioinformatics are discussed here. The book then covers theory and practice, as well as discrete versus continuous dynamic optimization, in the aim of creating a fresh and comprehensive volume. This book is targeted to either beginners and experienced practitioners in dynamic optimization, since we took care of deceiving the chapters in a way that a wide audience could profit from its contents. We hope to offer a single source for up-to-date information in dynamic optimization, an inspiring and attractive new research domain that appeared in these last years and is here to stay.

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Recent Advances in Swarm Intelligence and Evolutionary Computation - Xin-She Yang - 2014-12-27
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Trends in Intelligent Systems and Computer Engineering - Oscar Castillo - 2008-04-25
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Investigation of Real-coded Genetic Algorithm and Particle Swarm Optimization as Alternative Technique for Path Planning in Robot Manipulators - Qili Huang - 2007

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Tuning Innovation with Biotechnology - Dong Hwa Kim - 2017-11-13
This book deals with evolving intelligence systems and their use in immune algorithm (IM), particle swarm optimization (PSO), bacterial foraging (BF), and hybrid intelligent system to improve plants, robots, etc. It discusses the motivation behind research on and background of evolving intelligence systems and illustrates IM-based approach for parameter estimation required for designing an intelligent system. It

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This volume contains contributions from participants in the 2007 International Multiconference of Engineers and Computer Scientists. It covers a variety of subjects in the frontiers of intelligent systems and computer engineering and their industrial applications. The book offers up-to-date information on advances in intelligent systems and computer engineering and also serves as an excellent reference work for researchers and graduate students working in the field.
The two-volume set (LNCS 6728 and 6729) constitutes the refereed proceedings of the International Conference on Swarm Intelligence, ICSI 2011, held in Chongqing, China, in June 2011. The 143 revised full papers presented were carefully reviewed and selected from 298 submissions. The papers are organized in topical sections on theoretical analysis of swarm intelligence algorithms, particle swarm optimization, applications of pso algorithms, ant colony optimization algorithms, bee colony algorithms, novel swarm-based optimization algorithms, artificial immune system, differential evolution, neural networks, genetic algorithms, evolutionary computation, fuzzy methods, and hybrid algorithms - for part I. Topics addressed in part II are such as multi-objective optimization algorithms, multi-robot, swarm-robot, and multi-agent systems, data mining methods, machine learning methods, feature selection algorithms, pattern
and hybrid algorithms - for intelligent control, other optimization algorithms and applications, data fusion and swarm intelligence, as well as fish school search - foundations and applications.

Advances in Swarm Intelligence, Part II - Ying Tan - 2011-06-06
The two-volume set (LNCS 6728 and 6729) constitutes the refereed proceedings of the International Conference on Swarm Intelligence, ICSI 2011, held in Chongqing, China, in June 2011. The 143 revised full papers presented were carefully reviewed and selected from 298 submissions. The papers are organized in topical sections on theoretical analysis of swarm intelligence algorithms, particle swarm optimization, applications of pso algorithms, ant colony optimization algorithms, bee colony algorithms, novel swarm-based optimization algorithms, artificial immune system, differential evolution, neural networks, genetic algorithms, evolutionary computation, fuzzy methods, part I. Topics addressed in part II are such as multi-objective optimization algorithms, multi-robot, swarm-robot, and multi-agent systems, data mining methods, machine learning methods, feature selection algorithms, pattern recognition methods, intelligent control, other optimization algorithms and applications, data fusion and swarm intelligence, as well as fish school search - foundations and applications.

2018 6th International Conference on Cyber and IT Service Management (CITSM) - IEEE Staff - 2018-08-07
In the general area of computer science and information system It provides a forum for presenting and discussing the latest innovations, results and developments in cyber networks, pervasive systems, cloud environments, enterprise and IT related to service management.
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Generating Sentiment Lexica - - 2014

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Particle Swarm Optimisation - Jun Sun - 2011-12-19

Although the particle swarm optimisation (PSO) algorithm requires relatively few parameters and is computationally simple and easy to implement, it is not a globally convergent algorithm. In Particle Swarm Optimisation: Classical and Quantum Perspectives, the authors introduce their concept of quantum-behaved particles inspired by quantum mechanics, which leads to the quantum-behaved particle swarm optimisation (QPSO) algorithm. This globally convergent algorithm has fewer parameters, a faster convergence rate, and stronger searchability for complex problems. The book presents the concepts of optimisation problems as well as random search methods for optimisation before discussing the principles of the PSO algorithm. Examples illustrate how the PSO algorithm solves optimisation problems. The authors also analyse the reasons behind the shortcomings of the PSO algorithm. Moving on to the QPSO algorithm, the authors give a thorough overview of the literature on QPSO, describe the fundamental model for the QPSO algorithm, and explore applications of the algorithm to solve typical optimisation problems. They also discuss some advanced theoretical topics, including the behaviour of individual particles, global convergence,
easy to implement, it is not a convergence rate, and parameter selection. The text closes with coverage of several real-world applications, including inverse problems, optimal design of digital filters, economic dispatch problems, biological multiple sequence alignment, and image processing. MATLAB®, Fortran, and C++ source codes for the main algorithms are provided on an accompanying CD-ROM.

Helping you numerically solve optimisation problems, this book focuses on the fundamental principles and applications of PSO and QPSO algorithms. It not only explains how to use the algorithms, but also covers advanced topics that establish the groundwork for understanding state-of-the-art research in the field.

**Particle Swarm Optimisation** - Jun Sun - 2011-12-19

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Optimization - Srikanta Patnaik - 2017-03-07

The book provides readers with a snapshot of the state of the art in the field of nature-inspired computing and its application in optimization. The approach is mainly practice-oriented: each bio-inspired technique or algorithm is introduced together with one of its possible applications. Applications cover a wide range of real-world optimization problems: from feature selection and image enhancement to scheduling and dynamic resource management, from wireless sensor networks and wiring network diagnosis to sports training planning and gene expression, from topology control and morphological filters to nutritional meal design and antenna array design. There are a few theoretical chapters comparing different existing techniques, exploring the advantages of nature-inspired computing over other methods, and investigating the mixing time of genetic algorithms. The book also

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Nature-Inspired Computing and Optimization
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**Multi-Objective Optimization using Artificial Intelligence Techniques** - Seyedali Mirjalili - 2019-07-24
This book focuses on the most
nature-inspired algorithms capable of solving optimization problems with multiple objectives. Firstly, it provides preliminaries and essential definitions in multi-objective problems and different paradigms to solve them. It then presents an in-depth explanations of the theory, literature review, and applications of several widely-used algorithms, such as Multi-objective Particle Swarm Optimizer, Multi-Objective Genetic Algorithm and Multi-objective GreyWolf Optimizer. Due to the simplicity of the techniques and flexibility, readers from any field of study can employ them for solving multi-objective optimization problem. The book provides the source codes for all the proposed algorithms on a dedicated webpage.

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**Advances in Swarm Intelligence** - Ying Tan - 2014-09-03
This book and its companion volume, LNCS vol. 8794 and 8795 constitute the proceedings of the 5th International Conference on
management problems; 2014, held in Hefei, China in October 2014. The 107 revised full papers presented were carefully reviewed and selected from 198 submissions. The papers are organized in 18 cohesive sections, 3 special sessions and one competitive session covering all major topics of swarm intelligence research and development such as novel swarm-based search methods; novel optimization algorithm; particle swarm optimization; ant colony optimization for travelling salesman problem; artificial bee colony algorithms; artificial immune system; evolutionary algorithms; neural networks and fuzzy methods; hybrid methods; multi-objective optimization; multi-agent systems; evolutionary clustering algorithms; classification methods; GPU-based methods; scheduling and path planning; wireless sensor networks; power system optimization; swarm intelligence in image and video processing; applications of swarm intelligence to swarm intelligence for real-world application.

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Information Technology, multi-agent systems; evolutionary clustering algorithms; classification methods; GPU-based methods; scheduling and path planning; wireless sensor networks; power system optimization; swarm intelligence in image and video processing; applications of swarm intelligence to management problems; swarm intelligence for real-world application.

Advances in Communication, Network, and Computing - Vinu V Das - 2012-11-28
This book constitutes the thoroughly refereed proceedings of the Third International Conference on Advances in Communication, Network, and Computing, CNC 2012, held in Chennai, India, February 24-25, 2012. The 41 revised full papers presented together with 29 short papers and 14 poster papers were carefully selected and reviewed from 425 submissions. The papers cover a wide spectrum of issues in the field of Information Technology, Networks, Computational Engineering, Computer and Telecommunication Technology, ranging from theoretical and methodological issues to advanced applications.
this book is to highlight

**Swarm Intelligence and Evolutionary Algorithms in Healthcare and Drug Development** - Sandeep Kumar - 2019-12-05

Healthcare sector is characterized by difficulty, dynamism and variety. In 21st century, healthcare domain is surrounded by tons of challenges in terms of Disease detection, prevention, high costs, skilled technicians and better infrastructure. In order to handle these challenges, Intelligent Healthcare management technologies are required to play an effective role in improving patient’s life. Healthcare organizations also need to continuously discover useful and actionable knowledge to gain insight from tons of data for various purposes for saving lives, reducing medical operations errors, enhancing efficiency, reducing costs and making the whole world a healthy world. Applying Swarm Intelligence and Evolutionary Algorithms in Healthcare and Drug Development is essential nowadays. The objective of various Swarm Intelligence and Evolutionary Algorithms techniques for various medical issues in terms of Cancer Diagnosis, Brain Tumor, Diabetic Retinopathy, Heart disease as well as drug design and development. The book will act as one-stop reference for readers to think and explore Swarm Intelligence and Evolutionary Algorithms seriously for real-time patient diagnosis, as the book provides solutions to various complex diseases found critical for medical practitioners to diagnose in real-world. Key Features:

- Highlights the importance and applications of Swarm Intelligence and Evolutionary Algorithms in Healthcare industry.
- Elaborates Swarm Intelligence and Evolutionary Algorithms for Cancer Detection.
- In-depth coverage of computational methodologies, approaches and techniques based on Swarm Intelligence and Evolutionary Algorithms for detecting Brain Tumour including deep learning to optimize brain tumor.
diagnosis. Provides a strong foundation for Diabetic Retinopathy detection using Swarm and Evolutionary algorithms. Focuses on applying Swarm Intelligence and Evolutionary Algorithms for Heart Disease detection and diagnosis. Comprehensively covers the role of Swarm Intelligence and Evolutionary Algorithms for Drug Design and Discovery. The book will play a significant role for Researchers, Medical Practitioners, Healthcare Professionals and Industrial Healthcare Research and Development wings to conduct advanced research in Healthcare using Swarm Intelligence and Evolutionary Algorithms techniques.

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Discovery. The book will play a significant role for Researchers, Medical Practitioners, Healthcare Professionals and Industrial Healthcare Research and Development wings to conduct advanced research in Healthcare using Swarm Intelligence and Evolutionary Algorithms techniques.

**Swarm Intelligent Systems**
- Nadia Nedjah - 2006-06-27
Systems designers have learned that many agents cooperating within the system can solve very complex problems with a minimal design effort. In general, multi-agent systems that use swarm intelligence are said to be swarm intelligent systems. Today, these are mostly used as search engines and optimization tools. This volume reviews innovative methodologies of swarm intelligence, outlines the foundations of engineering swarm intelligent systems and applications, and relates experiences using the particle swarm optimisation.

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**Computational Intelligence, Optimization and Inverse Problems with Applications in Engineering** - Gustavo Mendes Platt - 2018-09-25

This book focuses on metaheuristic methods and its applications to real-world problems in Engineering. The first part describes some key metaheuristic methods, such as Bat Algorithms, Particle Swarm Optimization, Particle Collision Algorithms. Improved versions of these methods and strategies for parameter tuning are also presented, both of which are essential for the practical use of these important computational tools. The second part then applies metaheuristics to problems, mainly in Civil, Mechanical, Chemical, Electrical, and Nuclear Engineering. Other methods, such as the Flower Pollination Algorithm, Symbiotic Organisms Search, Cross-Entropy Algorithm, Artificial Bee Colonies, Population-Based Incremental Learning, Cuckoo Search, and Genetic Algorithms, are also presented. The book is rounded out by recently developed strategies, or hybrid improved versions of existing methods, such as the Lightning Optimization Algorithm, Differential Evolution with Particle Collisions, and Ant Colony Optimization with Dispersion - state-of-the-art approaches for the application of computational intelligence to engineering problems. The
of these important applications, as well as the original results to problems of practical engineering interest, represent the primary differentiation and distinctive quality of this book. Furthermore, it gathers contributions by authors from four countries – some of which are the original proponents of the methods presented – and 18 research centers around the globe.

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**Evolutionary Computing in Advanced Manufacturing** - Manoj Tiwari - 2011-07-05

"This cutting-edge book covers emerging, evolutionary and nature inspired optimization techniques in the field of advanced manufacturing. The complexity of real life advanced manufacturing problems often cannot be solved by traditional engineering or computational methods. Hence, in recent years researchers and practitioners have proposed and developed new strands of advanced, intelligent techniques and methodologies. Evolutionary computing approaches are introduced in the context of a wide range of manufacturing activities, and through the examination of practical problems and their solutions, readers will gain confidence to apply these powerful computing solutions. The initial chapters introduce and discuss the well established evolutionary algorithm, to help readers to understand the basic building blocks and steps required to successfully implement their own solutions to real life advanced manufacturing problems. In the later chapters, modified and improved versions of evolutionary algorithms are discussed. The book concludes with appendices which provide general descriptions of several evolutionary algorithms"--

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Ant Colony Optimization
and Swarm Intelligence -
Marco Dorigo - 2006-08-30
This book constitutes the
refereed proceedings of the
5th International Workshop
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ANTS 2006, held in Brussels,
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The 27 revised full papers, 23
revised short papers, and 12
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Advances in Swarm
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2021-07-07
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12689-12690 constitutes the
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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.

**Advances in Swarm Intelligence** - Ying Tan - 2021-07-07

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