

Design Of Small Electrical Machines Essam S Hamdi

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Climate Change and Cities Cynthia Rosenzweig
2018-03-29

The Urban Climate Change Research Network's
Second Assessment Report on Climate Change

in Cities (ARC3.2) is the second in a series of global, science-based reports to examine climate risk, adaptation, and mitigation efforts in cities. The book explicitly seeks to explore the implications of changing climatic conditions on critical urban physical and social infrastructure sectors and intersectoral concerns. The primary purpose of ARC3.2 is to inform the development and implementation of effective urban climate change policies, leveraging ongoing and planned investments for populations in cities of developing, emerging, and developed countries. This volume, like its predecessor, will be invaluable for a range of audiences involved with climate change and cities: mayors, city officials and policymakers; urban planners; policymakers charged with developing climate change mitigation and adaptation programs; and a broad spectrum of researchers and advanced students in the environmental sciences.

Dynamics and Control of Electrical Drives -
Wach Piotr 2011-04-28

Dynamics is a science concerned with movement and changes. In the most general approach it relates to life processes as well as behavior in nature in rest. It governs small particles, technical objects, conversion of matter and materials but also concerns people, groups of people in their individual and, in particular, social dimension. In dynamics we always have to do with causes or stimuli for motion, the rules of reaction or behavior and its result in the form of trajectory of changes. This book is devoted to dynamics of a wide class of specific but very important objects such as electromechanical systems. This is a very rigorous discipline and has a long tradition, as its theoretical bases were formulated in the first half of the XIX century by d' Alembert, Lagrange, Hamilton, Maxwell and other prominent scientists, but their crucial results were based on previous pioneering research of others such as Copernicus, Galileo, Newton... This book in its theoretical foundations is based on the principle of least

action which governs classical as well as relativistic mechanics and electromagnetism and leads to Lagrange's equations which are applied in the book as universal method to construct equations of motion of electromechanical systems. It gives common and coherent grounds to formulate mathematical models for all lumped parameters' electromechanical systems, which are vital in our contemporary industry and civilized everyday life. From these remarks it seems that the book is general and theoretical but in fact it is a very practical one concerning modern electrical drives in a broad sense, including electromechanical energy conversion, induction motor drives, brushless DC drives with a permanent magnet excitation and switched reluctance machines (SRM). And of course their control, which means shaping of their trajectories of motion using modern tools, their designed autonomy in keeping a track according to our programmed expectations. The problems presented in the book are widely illustrated by

characteristics, trajectories, dynamic courses all computed by use of developed simulation models throughout the book. There are some classical subjects and the history of the discipline is discussed but finally all modern tools and means are presented and applied. More detailed descriptions follow in abstracts for the particular chapters. The author hopes kind readers will enjoy and profit from reading this book.

Chemically Deposited Nanocrystalline Metal Oxide Thin Films - Fabian I. Ezema 2021-06-26

This book guides beginners in the areas of thin film preparation, characterization, and device making, while providing insight into these areas for experts. As chemically deposited metal oxides are currently gaining attention in development of devices such as solar cells, supercapacitors, batteries, sensors, etc., the book illustrates how the chemical deposition route is emerging as a relatively inexpensive, simple, and convenient solution for large area deposition. The advancement in the

nanostructured materials for the development of devices is fully discussed.

Encyclopedia of Data Science and Machine Learning - John Wang 2022

"This book examines current, state-of-the-art research in the areas of data science, machine learning, data mining, optimization, artificial intelligence, statistics, and the interactions, linkages, and applications of knowledge-based business with information systems"--

Genetic Algorithms in Search, Optimization, and Machine Learning - David Edward Goldberg 1989

A gentle introduction to genetic algorithms. Genetic algorithms revisited: mathematical foundations. Computer implementation of a genetic algorithm. Some applications of genetic algorithms. Advanced operators and techniques in genetic search. Introduction to genetics-based machine learning. Applications of genetics-based machine learning. A look back, a glance ahead. A review of combinatorics and elementary

probability. Pascal with random number generation for fortran, basic, and cobol programmers. A simple genetic algorithm (SGA) in pascal. A simple classifier system(SCS) in pascal. Partition coefficient transforms for problem-coding analysis.

Major Companies of the Arab World 1993/94 - Giselle C Bricault 2012-12-06

This book represents the seventeenth edition of the leading IMPORTANT reference work MAJOR COMPANIES OF THE ARAB WORLD. All company entries have been entered in MAJOR COMPANIES OF THE ARAB WORLD absolutely free of ThiS volume has been completely updated compared to last charge, thus ensuring a totally objective approach to the year's edition. Many new companies have also been included information given. this year. Whilst the publishers have made every effort to ensure that the information in this book was correct at the time of press, no The publishers remain confident that MAJOR COMPANIES

responsibility or liability can be accepted for any errors or OF THE ARAB WORLD contains more information on the omissions, or for the consequences thereof. major industrial and commercial companies than any other work. The information in the book was submitted mostly by the ABOUT GRAHAM & TROTMAN LTD companies themselves, completely free of charge. To all those Graham & Trotman Ltd, a member of the Kluwer Academic companies, which assisted us in our research operation, we Publishers Group, is a publishing organisation specialising in express grateful thanks. To all those individuals who gave us the research and publication of business and technical help as well, we are similarly very grateful. information for industry and commerce in many parts of the world.

Modeling, Simulation and Optimization of Wind Farms and Hybrid Systems Karam Maalawi
2020-03-25

The reduction of greenhouse gas emissions is a

major governmental goal worldwide. The main target, hopefully by 2050, is to move away from fossil fuels in the electricity sector and then switch to clean power to fuel transportation, buildings and industry. This book discusses important issues in the expanding field of wind farm modeling and simulation as well as the optimization of hybrid and micro-grid systems. Section I deals with modeling and simulation of wind farms for efficient, reliable and cost-effective optimal solutions. Section II tackles the optimization of hybrid wind/PV and renewable energy-based smart micro-grid systems.

Electrical Machines and Drives - Jan A. Melkebeek
2018-01-20

This book aims to offer a thorough study and reference textbook on electrical machines and drives. The basic idea is to start from the pure electromagnetic principles to derive the equivalent circuits and steady-state equations of the most common electrical machines (in the first parts). Although the book mainly

concentrates on rotating field machines, the first two chapters are devoted to transformers and DC commutator machines. The chapter on transformers is included as an introduction to induction and synchronous machines, their electromagnetics and equivalent circuits. Chapters three and four offer an in-depth study of induction and synchronous machines, respectively. Starting from their electromagnetics, steady-state equations and equivalent circuits are derived, from which their basic properties can be deduced. The second part discusses the main power-electronic supplies for electrical drives, for example rectifiers, choppers, cycloconverters and inverters. Much attention is paid to PWM techniques for inverters and the resulting harmonic content in the output waveform. In the third part, electrical drives are discussed, combining the traditional (rotating field and DC commutator) electrical machines treated in the first part and the power electronics of part two.

Field orientation of induction and synchronous machines are discussed in detail, as well as direct torque control. In addition, also switched reluctance machines and stepping motors are discussed in the last chapters. Finally, part 4 is devoted to the dynamics of traditional electrical machines. Also for the dynamics of induction and synchronous machine drives, the electromagnetics are used as the starting point to derive the dynamic models. Throughout part 4, much attention is paid to the derivation of analytical models. But, of course, the basic dynamic properties and probable causes of instability of induction and synchronous machine drives are discussed in detail as well, with the derived models for stability in the small as starting point. In addition to the study of the stability in the small, a chapter is devoted to large-scale dynamics as well (e.g. sudden short-circuit of synchronous machines). The textbook is used as the course text for the Bachelor's and Master's programme in electrical and

mechanical engineering at the Faculty of Engineering and Architecture of Ghent University. Parts 1 and 2 are taught in the basic course 'Fundamentals of Electric Drives' in the third bachelor. Part 3 is used for the course 'Controlled Electrical Drives' in the first master, while Part 4 is used in the specialised master on electrical energy.

Accession list - Perpustakaan Nasional (Indonesia) 1997

Transactions of the American Institute of Electrical Engineers American Institute of Electrical Engineers 1962

List of members in v. 7-15, 17, 19-20.

Advanced Thermoelectric Materials for Energy Harvesting Applications - Saim Memon 2019-10-30

Advanced Thermoelectric Materials for Energy Harvesting Applications is a research-intensive textbook covering the fundamentals of thermoelectricity and the process of converting

heat energy into electrical energy. It covers the design, implementation, and performance of existing and advanced thermoelectric materials. Chapters examine such topics as organic/inorganic thermoelectric materials, performance and behaviors of thermoelectric devices, and energy harvesting applications of thermoelectric devices.

The Reluctance of Some Irregular Magnetic Fields ... - John Frederic Howard Douglas 1915

Engineering Electromagnetics - William Hart Hayt 1983

Design of Small Electrical Machines - Essam S. Hamdi 1994-11-15

Designing electrical machines requires multi-disciplinary skills. Engineers must not only be expert in electromagnetic design, but also in selecting materials and choosing production techniques. Employing a range of examples, the author covers various design procedures from

specification to performance prediction.
Featuring: Selection and specification of components and materials Production techniques Focus on both the electrical and mechanical construction aspects Introduction to CAD Detailed exploration of thermal design Unified approach to permanent magnet and wound-field d.c. motor design Design of 50 Hz and 400 Hz induction motors Typical designs This timely book highlights the latest advances in design techniques and materials. By presenting a self-contained and unified treatment, it will prove invaluable to both professional engineers and senior students.

Proceedings of the 28th International Symposium on Mine Planning and Equipment Selection - MPES 2019 - Erkan Topal 2019-11-29

This conference proceedings presents the research papers in the field of mine planning and mining equipment including themes such as mine automation, rock mechanics, drilling,

blasting, tunnelling and excavation engineering. The papers presents the recent advancement and the application of a range of technologies in the field of mining industry. It is of interest to the professionals who practice in mineral industry including but not limited to engineers, consultants, managers, academics, scientist, and government staff.

Development of Brushless Self-excited and Self-regulated Synchronous Generating System for Wind and Hydro Generators - Izzat, Likaa Fahmi Ahmed 2013-01-01

In this work, a developed model of brushless synchronous generator of wound rotor type is designed, analyzed by FEM, practically applied and investigated. A comparison of results with conventional machines is also performed. The presented machine can be applied for multi-pole wind/ hydro generators or double-poles diesel-engine generators. It is self-excited by residual magnetism and a connected capacitor. It is also self-regulated by making use of fluctuations at

load or limited speed changes. The generated voltage may last at extended speed range by arranging a generating system with variable capacitance. By eliminating the permanent magnets or advanced manufacturing technology of rotor poles; and without using extra rotating/ external DC exciters, an efficient excitation field and an output of flat self-compensated compound characteristic are obtained. More, the feature of damper windings is determined. Concerning the fact of environmental diminishing of elements in materials of permanent magnets and D.C. Battery, the presented novel machine is hence a good alternative and more economic from generators, exist in the market. Beside, it is safer and highly recommended for power stability when connected to the grid.

Basics of Fluid Mechanics - Genick Bar-Meir
2009-09-01

Diagnosis and Fault-Tolerant Control -

Mogens Blanke 2013-03-14

This book presents model-based analysis and design methods for fault diagnosis and fault-tolerant control. Architectural and structural models are used to analyse the propagation of the fault through the process, test fault detectability and reveal redundancies that can be used to ensure fault tolerance. Case studies demonstrate the methods presented. The second edition includes new material on reconfigurable control, diagnosis of nonlinear systems, and remote diagnosis, plus new examples and updated bibliography.

The Engin eer- 1955

Met heuristics and Optimization in Computer and Electrical Engin eer - Na
David Razmjoo
2021-11-17

The use of artificial intelligence, especially in the field of optimization is increasing day by day. The purpose of this book is to explore the possibility of using different kinds of

optimization algorithms to advance and enhance the tools used for computer and electrical engineering purposes.

Fundamentals of Electrical Machines - Abdus Salam 2005

Based upon years of teaching experience, M. Abdus Salam covers the fundamentals and important topics which can help students to develop a lasting and sound knowledge of electrical machines.

Oculoplastic Surgery - Essam A. El Toukhy 2020-03-13

Oculoplastic Surgery: A Practical Guide to Common Disorders provides guidance on various clinical approaches for treating oculoplastic disorders as well as ocular trauma. In addition, highly illustrated and informative chapters examine the interaction between oculoplasty, ophthalmic sub-specialties (pediatrics, cataract, refractive, neuro, glaucoma) and other clinical areas including ENT, maxillofacial, dermatology, general plastic surgery and psychiatry.

Consultants, surgeons, trainees and health professionals from all the specialties and sub-specialties related to oculoplasty, will find this book to be an indispensable resource for further developing skills and knowledge in the field of oculoplastic surgery.

Modern Electric, Hybrid Electric, and Fuel Cell Vehicles - Mehrdad Ehsani 2018-02-02

"This book is an introduction to automotive technology, with specific reference to battery electric, hybrid electric, and fuel cell electric vehicles. It could serve electrical engineers who need to know more about automobiles or automotive engineers who need to know about electrical propulsion systems. For example, this reviewer, who is a specialist in electric machinery, could use this book to better understand the automobiles for which the reviewer is designing electric drive motors. An automotive engineer, on the other hand, might use it to better understand the nature of motors and electric storage systems for application in

automobiles, trucks or motorcycles. The early chapters of the book are accessible to technically literate people who need to know something about cars. While the first chapter is historical in nature, the second chapter is a good introduction to automobiles, including dynamics of propulsion and braking. The third chapter discusses, in some detail, spark ignition and compression ignition (Diesel) engines. The fourth chapter discusses the nature of transmission systems.” —James Kirtley, Massachusetts Institute of Technology, USA “The third edition covers extensive topics in modern electric, hybrid electric, and fuel cell vehicles, in which the profound knowledge, mathematical modeling, simulations, and control are clearly presented. Featured with design of various vehicle drivetrains, as well as a multi-objective optimization software, it is an estimable work to meet the needs of automotive industry.” —Haiyan Henry Zhang, Purdue University, USA “The extensive combined

experience of the authors have produced an extensive volume covering a broad range but detailed topics on the principles, design and architectures of Modern Electric, Hybrid Electric, and Fuel Cell Vehicles in a well-structured, clear and concise manner. The volume offers a complete overview of technologies, their selection, integration & control, as well as an interesting Technical Overview of the Toyota Prius. The technical chapters are complemented with example problems and user guides to assist the reader in practical calculations through the use of common scientific computing packages. It will be of interest mainly to research postgraduates working in this field as well as established academic researchers, industrial R&D engineers and allied professionals.” —Christopher Donaghy-Sparg, Durham University, United Kingdom The book deals with the fundamentals, theoretical bases, and design methodologies of conventional internal combustion engine (ICE)

vehicles, electric vehicles (EVs), hybrid electric vehicles (HEVs), and fuel cell vehicles (FCVs). The design methodology is described in mathematical terms, step-by-step, and the topics are approached from the overall drive train system, not just individual components. Furthermore, in explaining the design methodology of each drive train, design examples are presented with simulation results. All the chapters have been updated, and two new chapters on Mild Hybrids and Optimal Sizing and Dimensioning and Control are also included • Chapters updated throughout the text. • New homework problems, solutions, and examples. • Includes two new chapters. • Features accompanying MATLABM software.

Fractured Lands - Scott Anderson 2017-05-02
From the bestselling author of *Lawrence in Arabia*, a piercing account of how the contemporary Arab world came to be riven by catastrophe since the 2003 United States invasion of Iraq. In 2011, a series of anti-

government uprisings shook the Middle East and North Africa in what would become known as the Arab Spring. Few could predict that these convulsions, initially hailed in the West as a triumph of democracy, would give way to brutal civil war, the terrors of the Islamic State, and a global refugee crisis. But, as New York Times bestselling author Scott Anderson shows, the seeds of catastrophe had been sown long before. In this gripping account, Anderson examines the myriad complex causes of the region's profound unraveling, tracing the ideological conflicts of the present to their origins in the United States invasion of Iraq in 2003 and beyond. From this investigation emerges a rare view into a land in upheaval through the eyes of six individuals—the matriarch of a dissident Egyptian family; a Libyan Air Force cadet with divided loyalties; a Kurdish physician from a prominent warrior clan; a Syrian university student caught in civil war; an Iraqi activist for women's rights; and an Iraqi day laborer-turned-ISIS fighter. A probing

and insightful work of reportage, *Fractured Lands* offers a penetrating portrait of the contemporary Arab world and brings the stunning realities of an unprecedented geopolitical tragedy into crystalline focus.

Scientific and Technical Organizations and Agencies Directory - Peter D. Dresser 1994

This directory guides the reader to more than 15,000 national and international sources of information in the physical and applied sciences. It covers a broad range of organizations, agencies, programmes and services.

The British National Bibliography Arthur James Wells 1994

Switched Reluctance Motor Drives - R. Krishnan 2017-12-19

The switched reluctance machine (SRM) is the least expensive electrical machine to produce, yet one of the most reliable. As such, research has blossomed during the last decade, and the

SRM and variable drive systems using SRMs are receiving considerable attention from industry. Because they require a power electronic converter and controller to function, however, successful realization of an SRM variable drive system demands an understanding of the converter and controller subsystems and their integration with the machine. *Switched Reluctance Motor Drives* provides that understanding. It presents a unified view of the machine and its drive system from all of its system and subsystem aspects. With a careful balance of theory and implementation, the author develops the analysis and design of SRMs from first principles, introduces a wide variety of power converters available for driving the SRM, and systematically presents both low- and high-performance controllers. The book includes an in-depth study of acoustic noise and its minimization along with application examples that include comparisons between ac and dc drives and SRM drive. The result is the first

book that provides a state-of-the-art knowledge of SRMs, power converters, and their use with both sensor-based and sensorless controllers. Switched Reluctance Motor Drives enables both students and engineers to learn all aspects of SRM drive systems and appreciate the interdependence of the various subsystems in performance optimization.

High Voltage and Electrical Insulation

Engineering - Ravindra Arora 2022-03-10

High Voltage and Electrical Insulation Engineering A comprehensive graduate-level textbook on high voltage insulation engineering, updated to reflect emerging trends and techniques in the field High Voltage and Electrical Insulation Engineering presents systematic coverage of the behavior of dielectric materials. This classic textbook opens with clear explanations of fundamental terminology, electric-field classification, and field estimation techniques. Subsequent chapters describe the field dependent performance of gaseous,

vacuum, liquid, and solid dielectrics under different classified field conditions, and illustrate the monitoring of electrical insulation conditions by both single and continuous online methods. Throughout the text, numerous tables, figures, diagrams, and images are provided to strengthen understanding of all material. Fully revised to incorporate the most current technological application techniques, the second edition offers an entirely new section on condition monitoring of electrical insulation. Updated chapters discuss recent developments in gas-filled power apparatus, present-day trends in the use replacement of liquid insulating materials, the latest applications of new solid dielectrics in high voltage engineering, vacuum technology and liquid insulating materials, and more. This edition features a brand-new case study exploring the estimation of clearance requirements for 25 kV electric traction. Readers will also find the new edition: Provides new coverage of advances in the field, such as

the application of polymer insulators and the use of SF6 gas and its mixtures in gas-insulated systems/substations (GIS) Uses a novel approach that explores the field dependent behavior of dielectrics Explains the “weakly nonuniform field,” a unique concept introduced both conceptually and analytically in Germany A separate chapter provides the new approach to the mechanism of lightning phenomenon, which also includes the phenomenon of “Ball Lightning” The dielectric properties of vacuum and the development in the application of vacuum technology in power circuit breakers is covered in an exclusive chapter In-depth coverage of the performance of the sulphur-hexafluoride gas and its mixtures applicable to the design of Gas Insulated Systems including dry power transformers High Voltage and Electrical Insulation Engineering, Second Edition, remains the perfect textbook for graduate students, teachers, academic researchers, and utility and power industry

engineers and scientists involved in the field.
Smart Materials in Architecture, Interior Architecture and Design - Axel Ritter
2006-11-21

The use of smart materials in architecture is a dynamic and innovative area merging research, development, and use. Smart materials, with their reversible characteristics, respond to stimuli such as light, temperature, and electrical field by changing their form,color,viscosity, etc. One of the most fascinating developments is the advent of Phase Change Materials. These materials make it possible, for example, to develop self-acting, kinetic facades and wallpaper that changes its color and pattern based on temperature and light. The book presents the development of these materials and also describes their use in the contexts of architecture, design, and art. It offers a systematic overview with a detailed discussion of properties, technologies, products, and projects based on twenty groups of smart materials.

Electrical Insulation for Rotating Machines

- Greg C. Stone 2014-07-02

A fully expanded new edition documenting the significant improvements that have been made to the tests and monitors of electrical insulation systems *Electrical Insulation for Rotating Machines: Design, Evaluation, Aging, Testing, and Repair, Second Edition* covers all aspects in the design, deterioration, testing, and repair of the electrical insulation used in motors and generators of all ratings greater than fractional horsepower size. It discusses both rotor and stator windings; gives a historical overview of machine insulation design; and describes the materials and manufacturing methods of the rotor and stator winding insulation systems in current use (while covering systems made over fifty years ago). It covers how to select the insulation systems for use in new machines, and explains over thirty different rotor and stator winding failure processes, including the methods to repair, or least slow down, each process.

Finally, it reviews the theoretical basis, practical application, and interpretation of forty different tests and monitors that are used to assess winding insulation condition, thereby helping machine users avoid unnecessary machine failures and reduce maintenance costs.

Electrical Insulation for Rotating Machines: Documents the large array of machine electrical failure mechanisms, repair methods, and test techniques that are currently available Educates owners of machines as well as repair shops on the different failure processes and shows them how to fix or otherwise ameliorate them Offers chapters on testing, monitoring, and maintenance strategies that assist in educating machine users and repair shops on the tests needed for specific situations and how to minimize motor and generator maintenance costs Captures the state of both the present and past “art” in rotating machine insulation system design and manufacture, which helps designers learn from the knowledge acquired by previous

generations An ideal read for researchers, developers, and manufacturers of electrical insulating materials for machines, *Electrical Insulation for Rotating Machines* will also benefit designers of motors and generators who must select and apply electrical insulation in machines.

Advances in Energy Technology - Ramesh C. Bansal 2021-07-27

This book presents select proceedings of International Conference on Energy, Material Sciences and Mechanical Engineering (EMSME) 2020, held at National Institute of Technology Delhi. Various topics covered in this book include clean materials, solar energy systems, wind energy systems, power optimization, grid integration of renewable energy, smart energy storage technologies, artificial intelligence in solar and wind system, analysis of clean energy material in environment, converter topology, modelling and simulation. This book will be useful for researchers and professionals working

in the areas of solar material science, electrical engineering, and energy technologies.

The Cumulative Book Index - 1996

Electric Motors and Drives - Austin Hughes 2013-10-22

Written for non-specialist users of electric motors and drives, this book explains how electric drives work and compares the performance of the main systems, with many examples of applications. The author's approach - using a minimum of mathematics - has made this book equally popular as an outline for professionals and an introductory student text. * First edition (1990) has sold over 6000 copies. *Drives and Controls* on the first edition: 'This book is very readable, up-to-date and should be extremely useful to both users and o.e.m. designers. I unhesitatingly recommend it to any busy engineer who needs to make informed judgements about selecting the right drive system.' New features of the second edition: *

New section on the cycloconverter drive. * More on switched reluctance motor drives. * More on vector-controlled induction motor drives. * More on power switching devices. * New 'question and answer' sections on common problems and misconceptions. * Updating throughout. Electric Motors and Drives is for non-specialist users of electric motors and drives. It fills the gap between specialist textbooks (which are pitched at a level which is too academic for the average user) and the more prosaic 'handbooks' which are filled with useful detail but provide little opportunity for the development of any real insight or understanding. The book explores most of the widely-used modern types of motor and drive, including conventional and brushless d.c., induction motors (mains and inverter-fed), stepping motors, synchronous motors (mains and converter-fed) and reluctance motors. Design of axial-flux permanent-magnet low-speed machines and performance comparison between radial-flux and axial-flux machines -

Asko Parviainen 2005

Advanced Power Electronics Converters - Euzeli dos Santos 2014-11-10

This book covers power electronics, in depth, by presenting the basic principles and application details, which can be used both as a textbook and reference book. Introduces a new method to present power electronics converters called Power Blocks Geometry (PBG) Applicable for courses focusing on power electronics, power electronics converters, and advanced power converters Offers a comprehensive set of simulation results to help understand the circuits presented throughout the book A Field Guide to Genetic Programming - 2008 Genetic programming (GP) is a systematic, domain-independent method for getting computers to solve problems automatically starting from a high-level statement of what needs to be done. Using ideas from natural evolution, GP starts from an ooze of random

computer programs, and progressively refines them through processes of mutation and sexual recombination, until high-fitness solutions emerge. All this without the user having to know or specify the form or structure of solutions in advance. GP has generated a plethora of human-competitive results and applications, including novel scientific discoveries and patentable inventions. This unique overview of this exciting technique is written by three of the most active scientists in GP. See www.gp-field-guide.org.uk for more information on the book.

Metaheuristics in Machine Learning: Theory and Applications - Diego Oliva

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.

Advances in Remote Sensing and Geoinformatics Applications - Hesham M. El-Askary 2018-12-29

This edited volume is based on the best papers accepted for presentation during the 1st Springer Conference of the Arabian Journal of Geosciences (CAJG-1), Tunisia 2018. The book compiles a wide range of topics addressing various issues by experienced researchers

mainly from research institutes in the Mediterranean, MENA region, North America and Asia. Remote sensing observations can close gaps in information scarcity by complementing ground-based sparse data. Spatial, spectral, temporal and radiometric characteristics of satellites sensors are most suitable for features identification. The local to global nature and broad spatial scale of remote sensing with the wide range of spectral coverage are essential characteristics, which make satellites an ideal platform for mapping, observation, monitoring, assessing and providing necessary mitigation measures and control for different related Earth's systems processes. Main topics in this book include: Geo-informatics Applications, Land Use / Land Cover Mapping and Change Detection, Emerging Remote Sensing Applications, Rock Formations / Soil Lithology Mapping, Vegetation Mapping Impact and Assessment, Natural Hazards Mapping and Assessment, Ground Water Mapping and

Assessment, Coastal Management of Marine Environment and Atmospheric Sensing. Multiphysics Simulation by Design for Electrical Machines, Power Electronics and Drives - Dr. Marius Rosu 2017-11-20

Presents applied theory and advanced simulation techniques for electric machines and drives This book combines the knowledge of experts from both academia and the software industry to present theories of multiphysics simulation by design for electrical machines, power electronics, and drives. The comprehensive design approach described within supports new applications required by technologies sustaining high drive efficiency. The highlighted framework considers the electric machine at the heart of the entire electric drive. The book also emphasizes the simulation by design concept—a concept that frames the entire highlighted design methodology, which is described and illustrated by various advanced simulation technologies. Multiphysics Simulation by Design

for Electrical Machines, Power Electronics and Drives begins with the basics of electrical machine design and manufacturing tolerances. It also discusses fundamental aspects of the state of the art design process and includes examples from industrial practice. It explains FEM-based analysis techniques for electrical machine design—providing details on how it can be employed in ANSYS Maxwell software. In addition, the book covers advanced magnetic material modeling capabilities employed in numerical computation; thermal analysis; automated optimization for electric machines; and power electronics and drive systems. This valuable resource: Delivers the multi-physics

know-how based on practical electric machine design methodologies Provides an extensive overview of electric machine design optimization and its integration with power electronics and drives Incorporates case studies from industrial practice and research and development projects Multiphysics Simulation by Design for Electrical Machines, Power Electronics and Drives is an incredibly helpful book for design engineers, application and system engineers, and technical professionals. It will also benefit graduate engineering students with a strong interest in electric machines and drives.

American Book Publishing Record - 1995