Handbook Of Research On Computational Simulation And Modeling In Engineering Advances In Systems Analysis Software Engineering And High Performance Computing

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Handbook of Research on Computational Science and Engineering: Theory and Practice Engineering Science Reference

"This book looks at the combination of art, creativity and expression through the use and combination of computer science, and how technology can be used creatively for self expression using different approaches"--Provided by publisher.

Handbook of Research on Computational Intelligence for Engineering, Science, and Business Vol 1 Springer Science & Business Media

"This book presents, discusses, shares ideas, results and experiences on the recent important advances and future challenges on enabling technologies for achieving higher performance"--Provided by publisher.

Handbook of Computational Social Choice **CRC Press**

The explosive growth in computational power over the past several decades offers new tools and opportunities for economists. This handbook volume surveys recent

research on Agent-based Computational Economics (ACE), the computational study of economic processes modeled as dynamic systems of interacting agents. Empirical referents for "agents" in ACE models can range from individuals or social groups with learning capabilities to physical world features with no cognitive function. Topics covered include: learning; empirical validation; network economics; social dynamics; financial markets; innovation and technological change; organizations; market design; automated markets and trading agents; political economy; social-ecological systems; computational laboratory development; and general methodological issues. *Every volume contains contributions from leading researchers *Each Handbook presents an accurate, self-contained survey of a particular topic *The series provides comprehensive and accessible surveys

Handbook of Research on Nature-Inspired Computing for Economics and Management IGI Global

The Handbook of Computational Statistics - Concepts and Methods (second edition) is a revision of the first edition published in 2004, and contains additional comments and updated information on the existing chapters, as well as three new chapters addressing recent work in the field of computational statistics. This new edition is divided into 4 parts in the same way as the first edition. It begins with "How Computational Statistics became the backbone of

modern data science" (Ch.1): an overview of the field of Computational Statistics, how it emerged as a separate discipline, and how its own development mirrored that of hardware and software, including a discussion of current active research. The second part (Chs. 2 - 15) presents several topics in the supporting field of statistical computing. Emphasis is placed on the need for fast and accurate numerical algorithms, and some of the basic methodologies for transformation, database handling, high-dimensional data and graphics treatment are discussed. The third part (Chs. 16 - 33) focuses on statistical methodology. Special attention is given to smoothing, iterative procedures, simulation and visualization of multivariate data. Lastly, a set of selected applications (Chs. 34 - 38) like Bioinformatics, Medical Imaging, Finance, Econometrics and Network Intrusion Detection highlight the usefulness of computational statistics in real-world applications.

Handbook of Neural Computation Oxford University Press

This Oxford Handbook offers a comprehensive and authoritative review of important developments in computational and mathematical psychology. With chapters written by leading

scientists across a variety of subdisciplines, it examines the field's influence on related research areas such as cognitive psychology, developmental psychology, clinical psychology, and neuroscience. The Handbook emphasizes examples and applications of the latest research, and will appeal to readers possessing various levels of modeling experience. The Oxford Handbook of Computational and mathematical Psychology covers the key developments in elementary cognitive mechanisms (signal detection, information processing, reinforcement learning), basic cognitive skills (perceptual judgment, categorization, episodic memory), higher-level cognition (Bayesian cognition, decision making, semantic memory, shape perception), modeling tools (Bayesian estimation and other new model comparison methods), and emerging new directions in computation and mathematical psychology (neurocognitive modeling, applications to clinical psychology, quantum cognition). The Handbook would

make an ideal graduate-level textbook for courses in computational and mathematical psychology. Readers ranging from advanced undergraduates to experienced faculty members and researchers in virtually any area of psychology--including cognitive science and related social and behavioral sciences such as consumer behavior and communication--will find the text useful.

Handbook of Computational Social Science, Volume 2

Springer Science & Business Media

Any financial asset that is openly traded has a market price. Except for extreme market conditions, market price may be more or less than a “fair” value. Fair value is likely to be some complicated function of the current intrinsic value of tangible or intangible assets underlying the claim and our assessment of the characteristics of the underlying assets with respect to the expected rate of growth, future dividends, volatility, and other relevant market factors. Some of these factors that affect the price can be measured at the time of a

transaction with reasonably high accuracy. Most factors, however, relate to expectations about the future and to subjective issues, such as current management, corporate policies and market environment, that could affect the future financial performance of the underlying assets. Models are thus needed to describe the stochastic factors and environment, and their implementations inevitably require computational finance tools.

Handbook of Research on Computational Intelligence for Engineering, Science, and Business Vol 2 Routledge

The enormous complexity of biological systems at the molecular level must be answered with powerful computational methods. Computational biology is a young field, but has seen rapid growth and advancement over the past few decades. Surveying the progress made in this multidisciplinary field, the Handbook of Computational Molecular Biology of

The Oxford Handbook of Computational and Mathematical Psychology IGI Global

Multiple disciplines depend on computer programs and software to predict project challenges, outcomes, and solutions. Through the use of virtual prototyping, researchers and professionals are better able

to analyze data and improve projects without direct experimentation, which can be costly or dangerous. The Handbook of Research on Computational Simulation and Modeling in Engineering is an authoritative reference source on the computer models and technologies necessary to enhance engineering structures and planning for real-world applications. This publication is an essential resource for academicians, researchers, advanced-level students, technology developers, and engineers interested in the advancements taking place at the intersection of computer technology and the physical sciences. This publication features chapters on the advanced technologies developed within the field of engineering including prediction tools, software programs, algorithms, and theoretical and computational models.

Handbook of Research on Integrating Computer Science and Computational Thinking in K-12 Education IGI Global

"This book combines the fundamental methods, algorithms, and concepts of pervasive computing with current innovations and

solutions to emerging challenges. It systemically covers such topics as network and application scalability, wireless network connectivity, adaptability and "context-aware" computing, information technology security and liability, and human-computer interaction"--Provided by publisher.

The Cambridge Handbook of Computing Education Research

Cambridge University Press

Nature-inspired computation is an interdisciplinary topic area that connects the natural sciences to computer science. Since natural computing is utilized in a variety of disciplines, it is imperative to research its capabilities in solving optimization issues. The Handbook of Research on Natural Computing for Optimization Problems discusses nascent optimization procedures in nature-inspired computation and the innovative tools and techniques being utilized in the field. Highlighting empirical research and best practices concerning various optimization issues, this publication is a comprehensive reference for researchers, academicians, students, scientists, and technology developers interested in a multidisciplinary perspective on natural computational systems.

Handbook of Research on

Equity in Computer Science in P-16 Education IGI Global "This book offers a timely introduction to the possibilities in computational science and engineering to advance the ongoing research and applications leading to the discovery of new resources and cutting edge developments"-- Provided by publisher.

Handbook of Research on Natural Computing for Optimization Problems IGI Global "This book provides methodologies and developments of grid technologies applied in different fields of life sciences"--Provided by publisher.

Handbook of Research on Ubiquitous Computing Technology for Real Time Enterprises Cambridge University Press The digital age has presented an exponential growth in the amount of data available to individuals looking to draw conclusions based on given or collected information across industries. Challenges associated with the analysis, security, sharing, storage,

and visualization of large and complex data sets continue to plague data scientists and analysts alike as traditional data processing applications struggle to adequately manage big data. The Handbook of Research on Big Data Storage and Visualization Techniques is a critical scholarly resource that explores big data analytics and technologies and their role in developing a broad understanding of issues pertaining to the use of big data in multidisciplinary fields. Featuring coverage on a broad range of topics, such as architecture patterns, programing systems, and computational energy, this publication is geared towards professionals, researchers, and students seeking current research and application topics on the subject.

Handbook of Research on Using Educational Robotics to Facilitate Student Learning

Elsevier

By using computer simulations in research and development, computational science and engineering (CSE) allows empirical inquiry where traditional experimentation and

methods of inquiry are difficult, inefficient, or prohibitively expensive. The Handbook of Research on Computational Science and Engineering: Theory and Practice is a reference for interested researchers and decision-makers who want a timely introduction to the possibilities in CSE to advance their ongoing research and applications or to discover new resources and cutting edge developments. Rather than reporting results obtained using CSE models, this comprehensive survey captures the architecture of the cross-disciplinary field, explores the long term implications of technology choices, alerts readers to the hurdles facing CSE, and identifies trends in future development.

Handbook of Research on Computational Grid Technologies for Life Sciences, Biomedicine, and Healthcare Oxford University Press

"This book describes computational models of reading, or models that simulate and explain the mental processes that support the reading of text. The book provides introductory

chapters on both reading research and computer models. The central chapters of the book then review what has been learned about reading from empirical research on four core reading processes: word identification, sentence processing, discourse representation, and how these three processes are coordinated with visual processing, attention, and eye-movement control. These central chapters also review an influential sample of computer models that have been developed to explain these key empirical findings, as well as comparative analyses of those models. The final chapter attempts to integrate this empirical and theoretical work be both describing a new comprehensive model of reading, Über-Reader, and reporting several simulations to illustrate how the model accounts for many of the basic phenomena related to reading"--

Handbook of Research on Computational Intelligence for Engineering, Science, and Business Information Science Reference

While the growth of computational thinking has brought new awareness

to the importance of computing education, it has also created new challenges. Many educational initiatives focus solely on the programming aspects, such as variables, loops, conditionals, parallelism, operators, and data handling, divorcing computing from real-world contexts and applications. This decontextualization threatens to make learners believe that they do not need to learn computing, as they cannot envision a future in which they will need to use it, just as many see math and physics education as unnecessary. The Handbook of Research on Tools for Teaching Computational Thinking in P-12 Education is a cutting-edge research publication that examines the implementation of computational thinking into school curriculum in order to develop creative problem-solving skills and to build a computational identity which will allow for future STEM growth. Moreover, the book advocates for a new approach to computing education that argues that while learning about computing, young people should also have opportunities to create with computing, which will have a direct impact on their lives and their communities. Featuring a wide range of topics such as assessment, digital teaching, and educational robotics, this book is ideal for academicians, instructional designers, teachers, education professionals, administrators, researchers, and

students.

Computational Models of Reading Information Science Reference

Perspectives in Computing: A Computational Logic Handbook contains a precise description of the logic and a detailed reference guide to the associated mechanical theorem proving system, including a primer for the logic as a functional programming language, an introduction to proofs in the logic, and a primer for the mechanical theorem. The publication first offers information on a primer for the logic, formalization within the logic, and a precise description of the logic. Discussions focus on induction and recursion, quantification, explicit value terms, dealing with features and omissions, elementary mathematical relationships, Boolean operators, and conventional data structures. The text then takes a look at proving theorems in the logic, mechanized proofs in the logic, and an introduction to the system. The text examines the processes involved in using the theorem prover, four classes of rules generated from lemmas, and aborting or interrupting commands. Topics include executable counterparts, toggle, elimination of irrelevancy, heuristic use of equalities, representation of formulas, type sets, and the crucial check points in a proof attempt. The publication is a vital reference for researchers interested in

computational logic.

A Computational Logic Handbook IGI Global

Handbook of Neural Computation explores neural computation applications, ranging from conventional fields of mechanical and civil engineering, to electronics, electrical engineering and computer science. This book covers the numerous applications of artificial and deep neural networks and their uses in learning machines, including image and speech recognition, natural language processing and risk analysis. Edited by renowned authorities in this field, this work is comprised of articles from reputable industry and academic scholars and experts from around the world. Each contributor presents a specific research issue with its recent and future trends. As the demand rises in the engineering and medical industries for neural networks and other machine learning methods to solve different types of operations, such as data prediction, classification of images, analysis of big data, and intelligent decision-making, this book provides readers with the latest, cutting-edge research in one comprehensive text. Features high-quality research articles on multivariate adaptive regression splines, the minimax probability machine, and more Discusses machine learning techniques, including classification, clustering,

regression, web mining, information retrieval and natural language processing Covers supervised, unsupervised, reinforced, ensemble, and nature-inspired learning methods

Handbook of Research on Scalable Computing Technologies
Routledge

The rapidly growing field of computational social choice, at the intersection of computer science and economics, deals with the computational aspects of collective decision making. This handbook, written by thirty-six prominent members of the computational social choice community, covers the field comprehensively. Chapters devoted to each of the field's major themes offer detailed introductions. Topics include voting theory (such as the computational complexity of winner determination and manipulation in elections), fair allocation (such as algorithms for dividing divisible and indivisible goods), coalition formation (such as matching and hedonic games), and many more. Graduate students, researchers, and professionals in computer science, economics, mathematics, political science, and philosophy will benefit from this accessible and self-contained book.

Handbook of Research on Grid Technologies and Utility Computing: Concepts for Managing Large-Scale Applications CRC Press

ICT technologies have contributed to the advances in wireless systems, which provide seamless connectivity for worldwide communication. The growth of interconnected devices and the need to store, manage, and process the data from them has led to increased research on the intersection of the internet of things and cloud computing. The Handbook of Research on the IoT, Cloud Computing, and Wireless Network Optimization is a pivotal reference source that provides the latest research findings and solutions for the design and augmentation of wireless systems and cloud computing. The content within this publication examines data mining, machine learning, and software engineering, and is designed for IT specialists, software engineers, researchers, academicians, industry professionals, and students.