Top Computer Science Journals

This second edition presents a timely and practical discussion of vagal nerve stimulation in a clear and well-illustrated format. It provides a clinical approach to the treatment of patients with medically-intractable seizures, as well as for those with depression (a new indication since the publication of first edition). The book's focus has made

With the encroachment of the Internet into nearly all aspects of work and life, it seems as though information is everywhere. However, there is information and then there is correct, appropriate, and timely information. While we might love being able to turn to Wikipedia® for encyclopedia-like information or search Google® for the thousands of links on a topic, engineers need the best information, information that is evaluated, up-to-date, and complete. Accurate, vetted information is necessary when building new skyscrapers or developing new prosthetics for returning military veterans While the award-winning first edition of Using the Engineering Literature used a roadmap analogy, we now need a three-dimensional analysis reflecting the complex and dynamic nature of research in the information age. Using the Engineering Literature, Second Edition provides a guide to the wide range of resources available in all fields of engineering. This second edition has been thoroughly revised and features new sections on nanotechnology as well as green engineering. The information age has greatly impacted the way engineers find information. Engineers have an effect, directly and indirectly, on almost all aspects of our lives, and it is vital that they find the right information at the right time to create better products and processes. Comprehensive and up to date, with expert chapter authors, this book fills a gap in the literature, providing critical information in a user-friendly format.

Process Systems Engineering brings together the international community of researchers and engineers interested in computing-based methods in process engineering. This conference highlights the contributions of the PSE community towards the sustainability of modern society and is based on the 13th International Symposium on Process Systems Engineering PSE 2018 event held San Diego, CA, July 1-5 2018. The book contains contributions from academia and industry, establishing the core products of PSE, defining the new and changing scope of our results, and future challenges. Plenary and keynote lectures discuss real-world challenges (globalization, energy, environment and health) and contribute to discussions on the widening scope of PSE versus the consolidation of the core topics of PSE. Highlights how the Process Systems Engineering community contributes to the sustainability of modern society Establishes the core products of Process Systems Engineering Defines the future challenges of Process Systems Engineering

Making Takshila in California is an account of my journey to make a Takshila in California. It is a tale of revealing corruption, collusion, and abuse of power by the State of California. The Bureau for Private Post Secondary Education (BPPE), and Department of Consumer Affairs (DCA) of California engaged in abusive and unconstitutional activities. Takshila: One of the best performing innovative start-up institutions that trained high-tech professionals successfully. Silicon Valley and rest of the country happily employed them. Yet CTU has been bullied, threatened and subjected to injustice, prejudice, and discrimination. And the question is WHY? This WHY took us to the land where State Assembly members, Senators, the U.S. Congressman, and some media did not want to go. We questioned. We exposed wrongdoings of BPPE, DCA, California Attorney General (Kamala Harris and Xavier Becerra). We were, thus, systematically bullied, threatened, discriminated against and violated of our constitutional rights. We are not a unique situation. There are over several hundred may be near thousands of California institutions have a similar story to tell. Someone needs to ASK.

A Nobel Prize–winning cancer biologist, leader of major scientific institutions, and scientific adviser to President Obama reflects on his remarkable career. A PhD candidate in English

literature at Harvard University, Harold Varmus discovered he was drawn instead to medicine and eventually found himself at the forefront of cancer research at the University of California, San Francisco. In this "timely memoir of a remarkable career" (American Scientist), Varmus considers a life's work that thus far includes not only the groundbreaking research that won him a Nobel Prize but also six years as the director of the National Institutes of Health; his current position as the president of the Memorial Sloan-Kettering Cancer Center; and his important, continuing work as scientific adviser to President Obama. From this truly unique perspective, Varmus shares his experiences from the trenches of politicized battlegrounds ranging from budget fights to stem cell research, global health to science publishing.

BEST TEACHER EVER NOTEBOOK AND JOURNAL - MAKES FOR A PERFECT GIFT! This motivational and inspirational teacher inspired notebook is just what a teacher or education faculty or staff member needs to stay inspired and excited for the day. Not only is this journal visually appealing, it also allows for simple note taking or writing about whatever is going on in everyday life. This also makes for the perfect gift for teachers when starting or ending the year, or even better during teacher appreciation week. Unlike other notepads and journals that just have blank pages and nothing to work off of, this book features 150 pages of lined paper with teacher, education, and school based images printed at the bottom corner of each page. The setup of this writing book is perfect for notes, reminders, creating to-do lists and highlighting your top priorities -- all of which allows for easy navigation and complete creativity. Need to take notes? Write down school education and lesson plans? Jot down a new business plan? Have a daily diary or journal? It's all possible with this inspiring notebook and journal that is completely original and customized to fit your needs. SIZE: 6 X 9 PAPER: Lined White Paper FEATURES: School images on each page PAGES: 150 Pages COVER: Soft Cover (Matte) Limited Time Offer - only $6.97! Perfect for note taking, journaling and to-do lists Printed on high quality interior stock paper Premium matte finish cover with amazing art work Order your copy today!

The scholarly essays in the book open up experimental and novel spaces and genres beyond the traditional and the literary world of Indian Popular Fiction as it existed towards the end of the last millennium. They respond to the possibilities opened up by the technology-driven and internet-savvy reading and writing word of today. Contemporaneous and bold, most of the essays resonate with the racy and fast paced milieu and social media space inhabited by today's youth. Combative in its drift, this book makes possible an attempt to disband hierarchies and dismantle categories that have engulfed the expansive landscape of Indian Popular Fiction for too long. It facilitates discussion on graphic novels, micro fiction, popular-entertainment and political satire on television and celluloid, social media-driven romances existing in the domain of the 'real' rather than that of 'fantasy' and mythological readings against the backdrop of gender and politice(politics?). Aimed at facilitating further research by scholars and enthusiasts of Indian popular fiction, this book is also an ode to the current trends generated by social and internet media cosmos. Please note: Taylor & Francis does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

Siblings and all the lateral relationships that follow from them are clearly important and their interaction is widely observed, particularly in creative literature. Yet in the social, psychological and political sciences, there is no theoretical paradigm through which we might understand them. In the Western world our thought is completely dominated by a vertical model, by patterns of descent or ascent: mother or father to child, or child to parent. Yet our ideals are 'liberty, equality and fraternity' or the 'sisterhood' of feminism; our ethnic wars are the violence of 'fratricide'. When we grow up, siblings feature prominently in sex, violence and the construction of gender differences but they are absent from our theories. This book examines the reasons for this omission and

begins the search for a new paradigm based on siblings and lateral relationships. This book will be essential reading for those studying sociology, psychoanalysis and gender studies. It will also appeal to a wide general readership.

This book is a gentle introduction to dominance-based query processing techniques and their applications. The book aims to present fundamental as well as some advanced issues in the area in a precise, but easy-to-follow, manner. Dominance is an intuitive concept that can be used in many different ways in diverse application domains. The concept of dominance is based on the values of the attributes of each object. An object p dominates another object q if p is better than q. This goodness criterion may differ from one user to another. However, all decisions boil down to the minimization or maximization of attribute values. In this book, we will explore algorithms and applications related to dominance-based query processing. The concept of dominance has a long history in finance and multi-criteria optimization. However, the introduction of the concept to the database community in 2001 inspired many researchers to contribute to the area. Therefore, many algorithmic techniques have been proposed for the efficient processing of dominance-based queries, such as skyline queries, k-dominant queries, and top-k dominating queries, just to name a few. The present study attempts to examine the numerical correlation between web ranking of electronic scientific journals and impact factor of these journals using the method of regression analysis. Regression analysis allows the option of investigating and predicting the numerical relationship between website ranking of scientific journals on the World Wide Web and the value of impact factor of the journals. A sample of 57 publishers with 6,272 scientific journals and 50 standalone scientific journals was analyzed during research procedure. In this study, two different indicators about websites classification on World Wide Web were examined separately for 57 publishers and 50 standalone journals, Alexa rank and Statscrop rank. The electronic databases through the internet constitute the main information resources of this study about the impact factors. The general conclusion that arises is that the impact factor of electronic scientific journals illustrates a very strong positive correlation with classification of websites on the World Wide Web. Furthermore, it is concluded that the change of web ranking as a function of impact factor is governed by a Gaussian function or rational function with lower Pearson coefficient and presents non-linearly correlation. Even if there is very strong correlation between impact factor and web rank for electronic journals, the prediction of impact factor from web rank is not possible and presents many divergences.

The cybersecurity of connected medical devices is one of the biggest challenges facing healthcare today. The compromise of a medical device can result in severe consequences for both patient health and patient data. Cybersecurity for Connected Medical Devices covers all aspects of medical device cybersecurity, with a focus on cybersecurity capability development and maintenance, system and software threat modeling, secure design of medical devices, vulnerability management, and integrating cybersecurity design aspects into a medical device manufacturer's Quality Management Systems (QMS). This book is geared towards engineers interested in the medical device cybersecurity space, regulatory, quality, and human resources specialists, and organizational leaders interested in building a medical device cybersecurity program. Lays out clear guidelines for how to build a medical device

cybersecurity program through the development of capabilities Discusses different regulatory requirements of cybersecurity and how to incorporate them into a Quality Management System Provides a candidate method for system and software threat modelling Provides an overview of cybersecurity risk management for medical devices Presents technical cybersecurity controls for secure design of medical devices Provides an overview of cybersecurity verification and validation for medical devices Presents an approach to logically structure cybersecurity regulatory submissions

FPGA '17: The 2017 ACM/SIGDA International Symposium on Field-Programmable Gate Arrays Feb 22, 2017-Feb 24, 2017 Monterey, USA. You can view more information about this proceeding and all of ACMs other published conference proceedings from the ACM Digital Library: http://www.acm.org/dl.

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

This book, first published in 2002, gathers some of America's top subject expert librarians to determine the most influential journals in their respective fields. 32 contributing authors reviewed journals from over twenty countries that have successfully shaped the evolution of their individual specialties worldwide. Their choices reflect the history of each discipline or profession, taking into account rivalries between universities, professional societies, for-profit and not-for-profit publishers, and even nation-states and international ideologies, in each journal's quest for reputational dominance. Each journal was judged using criteria such as longevity of publication, foresight in carving out its niche, ability to attract & sustain professional or academic affiliations, opinion leadership or agenda-setting power, and ongoing criticality to the study or practice of their field. The book presents wholly independent reviewers; none are in the employ of any publisher, but each is fully credentialed and well published, and many are award-winners. The authors guide college and professional school librarians on limited budgets via an exposition of their analytical and critical winnowing process in determining the classic resources for their faculty, students, and working professional clientele.

This revised textbook motivates and illustrates the techniques of applied probability by applications in electrical engineering and computer science (EECS). The author presents information processing and communication

systems that use algorithms based on probabilistic models and techniques, including web searches, digital links, speech recognition, GPS, route planning, recommendation systems, classification, and estimation. He then explains how these applications work and, along the way, provides the readers with the understanding of the key concepts and methods of applied probability. Python labs enable the readers to experiment and consolidate their understanding. The book includes homework, solutions, and Jupyter notebooks. This edition includes new topics such as Boosting, Multi-armed bandits, statistical tests, social networks, queuing networks, and neural networks. The companion website now has many examples of Python demos and also Python labs used in Berkeley. Showcases techniques of applied probability with applications in EE and CS; Presents all topics with concrete applications so students see the relevance of the theory; Illustrates methods with Jupyter notebooks that use widgets to enable the users to modify parameters.

This highly illustrated, step-by-step guide gives detailed instructions for dozens of different manipulation techniques, covering all levels of the spine, thorax, and pelvis. It also includes a helpful overview of the principles and theory of spinal manipulation and its use in clinical practice. The accompanying DVD contains video clips demonstrating the techniques described in the book. The new edition is a highly illustrated, step-by-step guide to 41 manipulation techniques commonly used in clinical practice. The book also provides the related theory essential for safe and effective use of manipulation techniques.

The evolution of knowledge management theory and the special emphasis on human and social capital sets new challenges for knowledge-driven and technology-enabled innovation. Emerging technologies including big data and analytics have significant implications for sustainability, policy making, and competitiveness. This edited volume promotes scientific research into the potential contributions knowledge management can make to the new era of innovation and social inclusive economic growth. We are grateful to all the contributors of this edition for their intellectual work. The organization of the relevant debate is aligned around three pillars: SECTION A. DATA, KNOWLEDGE, HUMAN AND SOCIAL CAPITAL FOR INNOVATION We elaborate on the new era of knowledge types and the emerging forms of social capital and their impact on technology-driven innovation. Topics include: · Social Networks · Smart Education · Social Capital · Corporate Innovation · Disruptive Innovation · Knowledge integration · Enhanced Decision-Making. SECTION B. KNOWLEDGE MANAGEMENT & BIG DATA ENABLED INNOVATION In this section, knowledge management and big data applications and systems are presented. Selective topic include: · Crowdsourcing Analysis · Natural Language Processing · Data Governance · Knowledge Extraction · Ontology Design Semantic Modeling SECTION C. SUSTAINABLE DEVELOPMENT In the section, the debate on the impact of knowledge management and big data research to sustainability is promoted with integrative discussion of complementary social

and technological factors including: · Big Social Networks on Sustainable Economic Development · Business Intelligence

This book constitutes the refereed proceedings of the 17th Conference on Artificial Intelligence in Medicine, AIME 2019, held in Poznan, Poland, in June 2019. The 22 revised full and 31 short papers presented were carefully reviewed and selected from 134 submissions. The papers are organized in the following topical sections: deep learning; simulation; knowledge representation; probabilistic models; behavior monitoring; clustering, natural language processing, and decision support; feature selection; image processing; general machine learning; and unsupervised learning.

At a time when immigration law is in flux, Understanding Immigration Law and Practice offers a thorough, accessible, and practical approach to understand and apply U.S. laws and regulations to help protect refugees, bring needed workers to the U.S, prevent separation of and reunite families, and provide relief to foreign nationals facing removal proceedings. Attuned to the sensitivity and responsibility necessary to ensure just results in high stakes immigration cases, the authors, who have a combined 35-plus years of front-line experience, provide readers with in-depth information and highlight readers recent changes and ongoing litigation where applicable. In addition, the book offers a new section on enforcement in both in the non-and employment-based contexts, providing avenues for discussions on matters of policy. They generously and freely offer their knowledge and insights into the complex legal issues faced by immigration clients, followed up by proposing strategies for the professionals seeking to help them. New to the Second Edition: Major revisions that reflect a new focus on strict enforcement of immigration laws and the use of Executive Orders and procedural changes that affect the implementation and application of the law including: Migrant Protection Protocols Zero Tolerance Policy Safe Third Country Proposals Extreme vetting Muslim Ban Updated discussions of significant legal changes arising from case law such as: Pereira v. Sessions, a decision of the U.S. Supreme Court and subsequent decisions by the Board of Immigration Appeals and circuit courts, highlighting tensions around what information a valid notice to appear should contain. Matter of A-B, which sought to categorically exclude asylum claims based on domestic and gang-based violence Matter of L-A-B-R-, which severely restricts the use of continuances in removal proceedings Matter of Castro Tum, which limits the ability of immigration judges to close removal proceedings administratively. Analysis of the changes to public charge requirements affecting family members seeking to immigrate or become permanent residents in the United States Review of the recent changes to the EB-5 or investor visa process as an avenue to achieve permanent residency for those who provide job creating investments in the United States Professors, students, and legal practitioners new to the practice of immigration law will benefit from: Compact, accessible coverage of complex fluctuating U.S. immigration law and regulations, including: Nonimmigrant visas, including

B-1/B-2, F-1. H-1Bs, and visas for investment and trade. Immigration options for humanitarian immigrants such as asylum seekers, refugees, survivors of domestic violence protected by the Violence Against Women Act (VAWA), SIJ, U, and T visa applicants. Lawful permanent resident applications based on family relationships, employment, and investment, including adjustment of status, Permanent Labor Certification Program (PERM), and consular processing. Grounds of inadmissibility, deportation, and immigration court removal processes, including waivers and relief from removal. Explanation of immigration court procedures and relief available in removal proceedings Naturalization and citizenship eligibility. Balanced coverage of statutory and procedural rules with practical insights to aid in problem solving. Numerous cases for discussion, with responses on the companion website available to instructors. Frequent vivid examples and cases from real life to assist readers in translating legal rules and theory into practice. Tools for student success, including learning objectives, marginal notes on key terms, and many documents and illustrations from actual practice. A chapter on managing the immigration practice, including performing case assessment and interviewing. Website updates to keep students and faculty current with the latest changes in this fast-moving subject area.

IOT: Security and Privacy Paradigm covers the evolution of security and privacy issues in the Internet of Things (IoT). It focuses on bringing all security and privacy related technologies into one source, so that students, researchers, and practitioners can refer to this book for easy understanding of IoT security and privacy issues. This edited book uses Security Engineering and Privacy-by-Design principles to design a secure IoT ecosystem and to implement cyber-security solutions. This book takes the readers on a journey that begins with understanding the security issues in IoT-enabled technologies and how it can be applied in various aspects. It walks readers through engaging with security challenges and builds a safe infrastructure for IoT devices. The book helps readers gain an understand of security architecture through IoT and describes the state of the art of IoT countermeasures. It also differentiates security threats in IoT-enabled infrastructure from traditional ad hoc or infrastructural networks, and provides a comprehensive discussion on the security challenges and solutions in RFID, WSNs, in IoT. This book aims to provide the concepts of related technologies and novel findings of the researchers through its chapter organization. The primary audience includes specialists, researchers, graduate students, designers, experts and engineers who are focused on research and security related issues. Souvik Pal, PhD, has worked as Assistant Professor in Nalanda Institute of Technology, Bhubaneswar, and JIS College of Engineering, Kolkata (NAAC "A" Accredited College). He is the organizing Chair and Plenary Speaker of RICE Conference in Vietnam; and organizing co-convener of ICICIT, Tunisia. He has served in many conferences as chair, keynote speaker, and he also chaired international conference sessions and presented session talks internationally. His research area includes Cloud Computing, Big Data, Wireless

Sensor Network (WSN), Internet of Things, and Data Analytics. Vicente García-Díaz, PhD, is an Associate Professor in the Department of Computer Science at the University of Oviedo (Languages and Computer Systems area). He is also the editor of several special issues in prestigious journals such as Scientific Programming and International Journal of Interactive Multimedia and Artificial Intelligence. His research interests include eLearning, machine learning and the use of domain specific languages in different areas. Dac-Nhuong Le, PhD, is Deputy-Head of Faculty of Information Technology, and Vice-Director of Information Technology Apply and Foreign Language Training Center, Haiphong University, Vietnam. His area of research includes: evaluation computing and approximate algorithms, network communication, security and vulnerability, network performance analysis and simulation, cloud computing, IoT and image processing in biomedical. Presently, he is serving on the editorial board of several international journals and has authored nine computer science books published by Springer, Wiley, CRC Press, Lambert Publication, and Scholar Press.

Work practices and organizational processes vary widely and evolve constantly. The technological infrastructure has to follow, allowing or even supporting these changes. Traditional approaches to software engineering reach their limits whenever the full spectrum of user requirements cannot be anticipated or the frequency of changes makes software reengineering cycles too clumsy to address all the needs of a specific field of application. Moreover, the increasing importance of 'infrastructural' aspects, particularly the mutual dependencies between technologies, usages, and domain competencies, calls for a differentiation of roles beyond the classical user–designer dichotomy. End user development (EUD) addresses these issues by offering lightweight, use-time support which allows users to configure, adapt, and evolve their software by themselves. EUD is understood as a set of methods, techniques, and tools that allow users of software systems who are acting as non-professional software developers to 1 create, modify, or extend a software artifact. While programming activities by non-professional actors are an essential focus, EUD also investigates related activities such as collective understanding and sense-making of use problems and solutions, the interaction among end users with regard to the introduction and diffusion of new configurations, or delegation patterns that may also partly involve professional designers.

Advanced Methods and Deep Learning in Computer Vision presents advanced computer vision methods, emphasizing machine and deep learning techniques that have emerged during the past 5–10 years. The book provides clear explanations of principles and algorithms supported with applications. Topics covered include machine learning, deep learning networks, generative adversarial networks, deep reinforcement learning, self-supervised learning, extraction of robust features, object detection, semantic segmentation, linguistic descriptions of images, visual search, visual tracking, 3D shape retrieval, image

inpainting, novelty and anomaly detection. This book provides easy learning for researchers and practitioners of advanced computer vision methods, but it is also suitable as a textbook for a second course on computer vision and deep learning for advanced undergraduates and graduate students. Provides an important reference on deep learning and advanced computer methods that was created by leaders in the field Illustrates principles with modern, real-world applications Suitable for self-learning or as a text for graduate courses

The seven-volume set LNCS 12137, 12138, 12139, 12140, 12141, 12142, and 12143 constitutes the proceedings of the 20th International Conference on Computational Science, ICCS 2020, held in Amsterdam, The Netherlands, in June 2020.* The total of 101 papers and 248 workshop papers presented in this book set were carefully reviewed and selected from 719 submissions (230 submissions to the main track and 489 submissions to the workshops). The papers were organized in topical sections named: Part I: ICCS Main Track Part II: ICCS Main Track Part III: Advances in High-Performance Computational Earth Sciences: Applications and Frameworks; Agent-Based Simulations, Adaptive Algorithms and Solvers; Applications of Computational Methods in Artificial Intelligence and Machine Learning; Biomedical and Bioinformatics Challenges for Computer Science Part IV: Classifier Learning from Difficult Data; Complex Social Systems through the Lens of Computational Science; Computational Health; Computational Methods for Emerging Problems in (Dis-)Information Analysis Part V: Computational Optimization, Modelling and Simulation; Computational Science in IoT and Smart Systems; Computer Graphics, Image Processing and Artificial Intelligence Part VI: Data Driven Computational Sciences; Machine Learning and Data Assimilation for Dynamical Systems; Meshfree Methods in Computational Sciences; Multiscale Modelling and Simulation; Quantum Computing Workshop Part VII: Simulations of Flow and Transport: Modeling, Algorithms and Computation; Smart Systems: Bringing Together Computer Vision, Sensor Networks and Machine Learning; Software Engineering for Computational Science; Solving Problems with Uncertainties; Teaching Computational Science; UNcErtainty QUantIficatiOn for ComputationAl modeLs *The conference was canceled due to the COVID-19 pandemic.

The information age has grown out of the work of experimental computer science, which is dedicated to the development of new hardware, software, graphics, interfaces, and other computer system technologies. While it is important to society in this larger sense, experimental computer science has found an awkward fit in university environments. This volume examines what is special about experimental computer science and what can be done to achieve a better fit for its practitioners in the academic context.

ASIA CCS '17: ACM Asia Conference on Computer and Communications Security Apr 02, 2017-Apr 06, 2017 Abu Dhabi, United Arab Emirates. You can view more information about this proceeding and all of ACMs other published conference proceedings from the ACM Digital Library: http://www.acm.org/dl.

200 page college ruled page notebook Page Dimensions: 8.5" x 11" flexible matte softback cover This classic notebook is a wonderful multi-purpose journal for writing notes, action items, jotting down thoughts, planning and as a journal. The notebook is made with flexible matte softback cover, which helps repel liquids Scroll to the top of the pageReview, 'Look Inside' and Buy Now Thanks! A complete update to a classic, respected resource Invaluable reference, supplying a comprehensive overview on how to undertake and present research The book, presenting the proceedings of the 2018 Future Technologies Conference (FTC 2018), is a remarkable collection of chapters covering a wide range of topics, including, but not limited to computing, electronics, artificial intelligence, robotics, security and communications and their real-world applications. The conference attracted a total of 503 submissions from pioneering researchers, scientists, industrial engineers, and students from all over the world. After a double-blind peer review process, 173 submissions (including 6 poster papers) have been selected to be included in these proceedings. FTC 2018 successfully brought together technology geniuses in one venue to not only present breakthrough research in future technologies but to also promote practicality and applications and an intra- and inter-field exchange of ideas. In the future, computing technologies will play a very important role in the convergence of computing, communication, and all other computational sciences and applications. And as a result it will also influence the future of science, engineering, industry, business, law, politics, culture, and medicine. Providing state-of-the-art intelligent methods and techniques for solving real-world problems, as well as a vision of the future research, this book is a valuable resource for all those interested in this area.

Natural Computing is the field of research that investigates both human-designed computing inspired by nature and computing taking place in nature, i.e., it investigates models and computational techniques inspired by nature and also it investigates phenomena taking place in nature in terms of information processing. Examples of the first strand of research covered by the handbook include neural computation inspired by the functioning of the brain; evolutionary computation inspired by Darwinian evolution of species; cellular automata inspired by intercellular communication; swarm intelligence inspired by the behavior of groups of organisms; artificial immune systems inspired by the natural immune system; artificial life systems inspired by the properties of natural life in general; membrane computing inspired by the compartmentalized ways in which cells process information; and amorphous computing inspired by morphogenesis. Other examples of natural-computing paradigms are molecular computing and quantum computing, where the goal is to replace traditional electronic hardware, e.g., by bioware in molecular computing. In molecular computing, data are encoded as biomolecules and then molecular biology tools are used to transform the data, thus performing computations. In quantum computing, one exploits quantum-mechanical phenomena to perform computations and secure communications more efficiently than classical physics and, hence, traditional hardware allows. The second strand of research covered by the handbook, computation taking place in nature, is represented by investigations into, among others, the computational nature of self-assembly, which lies at the core of nanoscience, the computational nature of developmental processes, the computational nature of biochemical reactions, the computational nature of bacterial communication, the

computational nature of brain processes, and the systems biology approach to bionetworks where cellular processes are treated in terms of communication and interaction, and, hence, in terms of computation. We are now witnessing exciting interaction between computer science and the natural sciences. While the natural sciences are rapidly absorbing notions, techniques and methodologies intrinsic to information processing, computer science is adapting and extending its traditional notion of computation, and computational techniques, to account for computation taking place in nature around us. Natural Computing is an important catalyst for this two-way interaction, and this handbook is a major record of this important development. AI, Edge, and IoT Smart Agriculture integrates applications of IoT, edge computing, and data analytics for sustainable agricultural development and introduces Edge of Thing-based data analytics and IoT for predictability of crop, soil, and plant disease occurrence for improved sustainability and increased profitability. The book also addresses precision irrigation, precision horticulture, greenhouse IoT, livestock monitoring, IoT ecosystem for agriculture, mobile robot for precision agriculture, energy monitoring, storage management, and smart farming. The book provides an overarching focus on sustainable environment and sustainable economic development through smart and e-agriculture. Providing a medium for the exchange of expertise and inspiration, contributions from both smart agriculture and data mining researchers around the world provide foundational insights. The book provides practical application opportunities for the resolution of real-world problems, including contributions from the data mining, data analytics, Edge of Things, and cloud research communities working in the farming production sector. The book offers broad coverage of the concepts, themes, and instruments of this important and evolving area of IOT-based agriculture, Edge of Things and cloud-based farming, Greenhouse IOT, mobile agriculture, sustainable agriculture, and big data analytics in agriculture toward smart farming. Integrates sustainable agriculture, Greenhouse IOT, precision agriculture, crops monitoring, crops controlling to prediction, livestock monitoring, and farm management Presents data mining techniques for precision agriculture, including weather prediction, plant disease prediction, and decision support for crop and soil selection Promotes the importance and uses in managing the agro ecosystem for food security Emphasizes low energy usage options for low cost and environmental sustainability

Big Data in Radio Astronomy: Scientific Data Processing for Advanced Radio Telescopes provides the latest research developments in big data methods and techniques for radio astronomy. Providing examples from such projects as the Square Kilometer Array (SKA), the world's largest radio telescope that generates over an Exabyte of data every day, the book offers solutions for coping with the challenges and opportunities presented by the exponential growth of astronomical data. Presenting state-of-the-art results and research, this book is a timely reference for both practitioners and researchers working in radio astronomy, as well as students looking for a basic understanding of big data in astronomy. Bridges the gap between radio astronomy and computer science Includes coverage of the observation lifecycle as well as data collection, processing and analysis Presents state-of-the-art research and techniques in big data related to radio astronomy Utilizes real-world examples, such as Square Kilometer Array (SKA) and Five-hundred-meter Aperture Spherical radio Telescope (FAST)

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