Neco Practical Solutions

Drought (hydrological, meteorological, and/or agronomical) disturbs water balance in certain domains and limits green/blue water resources for our basic needs, including food and energy production. This book presents the most recent insights related to drought types, their detection, and their effects on food, energy, and municipal water supplies. It also examines some novel approaches to drought management.

One of the most striking properties of biological systems is their ability to learn and adapt to ever changing environmental conditions, tasks and stimuli. It emerges from a number of different forms of plasticity, that change the properties of the computing substrate, mainly acting on the modification of the strength of synaptic connections that gate the flow of information across neurons. Plasticity is an essential ingredient for building artificial autonomous cognitive agents that can learn to reliably and meaningfully interact with the real world. For this reason, the neuromorphic community at large has put substantial effort in the design of different forms of plasticity and in putting them to practical use. These plasticity forms comprise, among others, Short Term Depression and Facilitation, Homeostasis, Spike Frequency Adaptation and diverse forms of Hebbian learning (e.g. Spike Timing Dependent Plasticity). This special research topic collects the most advanced developments in the design of the diverse forms of plasticity, from the single circuit to the system level, as well as their exploitation in the implementation of cognitive systems.

Representations are at the heart of artificial intelligence (AI). This book is devoted to the problem of representation discovery: how can an intelligent system construct representations from its experience? Representation discovery re-parameterizes the state space - prior to the application of information retrieval, machine learning, or optimization techniques - facilitating later inference processes by constructing new task-specific bases adapted to the state space geometry. This book presents a general approach to representation discovery using the framework of harmonic analysis, in particular Fourier and wavelet analysis. Biometric compression methods, the compact disc, the computerized axial tomography (CAT) scanner in medicine, JPEG compression, and spectral analysis of time-series data are among the many applications of classical Fourier and wavelet analysis. A central goal of this book is to show that these analytical tools can be generalized from their usual setting in (infinite-dimensional) Euclidean spaces to discrete (finite-dimensional) spaces typically studied in many subfields of AI. Generalizing harmonic analysis to discrete spaces poses many challenges: a discrete representation of the space must be adaptively acquired; basis functions are not pre-defined, but rather must be constructed. Algorithms for efficiently computing and representing bases require dealing with the curse of dimensionality. However, the benefits can outweigh the costs, since the extracted basis functions outperform parametric bases as they often reflect the irregular

shape of a particular state space. Case studies from computer graphics, information retrieval, machine learning, and state space planning are used to illustrate the benefits of the proposed framework, and the challenges that remain to be addressed. Representation discovery is an actively developing field, and the author hopes this book will encourage other researchers to explore this exciting area of research.

The field of healthcare is seeing a rapid expansion of technological advancement within current medical practices. The implementation of technologies including neural networks, multi-model imaging, genetic algorithms, and soft computing are assisting in predicting and identifying diseases, diagnosing cancer, and the examination of cells. Implementing these biomedical technologies remains a challenge for hospitals worldwide, creating a need for research on the specific applications of these computational techniques. Deep Neural Networks for Multimodal Imaging and Biomedical Applications provides research exploring the theoretical and practical aspects of emerging data computing methods and imaging techniques within healthcare and biomedicine. The publication provides a complete set of information in a single module starting from developing deep neural networks to predicting disease by employing multi-modal imaging. Featuring coverage on a broad range of topics such as prediction models, edge computing, and quantitative measurements, this book is ideally designed for researchers, academicians, physicians, IT consultants, medical software developers, practitioners, policymakers, scholars, and students seeking current research on biomedical advancements and developing computational methods in healthcare.

The recent rise of emerging networking technologies such as social networks, content centric networks, Internet of Things networks, etc, have attracted significant attention from academia as well as industry professionals looking to utilize these technologies for efficiency purposes. However, the allure of such networks and resultant storage of high volumes of data leads to increased security risks, including threats to information privacy. Artificial Intelligence and Security Challenges in Emerging Networks is an essential reference source that discusses applications of artificial intelligence, machine learning, and data mining, as well as other tools and strategies to protect networks against security threats and solve security and privacy problems. Featuring research on topics such as encryption, neural networks, and system verification, this book is ideally designed for ITC procurement managers, IT consultants, systems and network integrators, infrastructure service providers, computer and software engineers, startup companies, academicians, researchers, managers, and students.

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While the availability of electronic documents increases exponentially with advancing technology, the time spent to process this wealth of resourceful information decreases. Content analysis and information extraction must be

aided by summarization methods to quickly parcel pieces of interest and allow for succinct user familiarization in a simple, efficient manner. Trends and Applications of Text Summarization Techniques is a pivotal reference source that explores the latest approaches of document summarization including update, multi-lingual, and domain-oriented summarization tasks and examines their current real-world applications in multiple fields. Featuring coverage on a wide range of topics such as parallel construction, social network integration, and evaluation metrics, this book is ideally designed for information technology practitioners, computer scientists, bioinformatics analysts, business managers, healthcare professionals, academicians, researchers, and students.

In today's modernized market, various disciplines continue to search for universally functional technologies that improve upon traditional processes. Artificial neural networks are a set of statistical modeling tools that are capable of processing nonlinear data with strong accuracy. Due to their complexity, utilizing their potential was previously seen as a challenge. However, with the development of artificial intelligence, this technology has proven to be an effective and efficient problem-solving method. Artificial Neural Network Applications in Business and Engineering is an essential reference source that illustrates recent advancements of artificial neural networks in various professional fields, accompanied by specific case studies and practical examples. Featuring research on topics such as training algorithms, transportation, and computer security, this book is ideally designed for researchers, students, developers, managers, engineers, academicians, industrialists, policymakers, and educators seeking coverage on modern trends in artificial neural networks and their real-world implementations.

Vols. for 1968- incorporate E M $ D product data.

This book is intended for use in Physics laboratories as a workbook for carrying out practical physics experiments by secondary school students and first year higher institution students. The objective is to have an all-in-one workbook from which various relevant physics experiments can be performed in a manner that also prepares students for practical physics examinations especially those of the West African Senior School Certificate Examination (WASSCE) and the National Examination Council (NECO).

Designing Solutions-Based Ubiquitous and Pervasive Computing: New Issues and TrendsNew Issues and TrendsIGI Global

Through the rise of big data and the internet of things, terrorist organizations have been freed from geographic and logistical confines and now have more power than ever before to strike the average citizen directly at home. This, coupled with the inherently asymmetrical nature of cyberwarfare, which grants great advantage to the attacker, has created an unprecedented national security risk that both governments and their citizens are woefully ill-prepared to face. Examining cyber warfare and terrorism through a critical and academic perspective can lead to a better understanding of its foundations and implications. Cyber Warfare and Terrorism: Concepts, Methodologies, Tools, and Applications is an essential reference for the latest research on the utilization of online tools by terrorist organizations to communicate with and recruit potential extremists and examines effective countermeasures employed by law enforcement agencies to defend against such threats. Highlighting a range of topics such as cyber threats, digital intelligence, and counterterrorism, this multi-volume book is ideally

designed for law enforcement, government officials, lawmakers, security analysts, IT specialists, software developers, intelligence and security practitioners, students, educators, and researchers.

The concept of natural language processing has become one of the preferred methods to better understand consumers, especially in recent years when digital technologies and research methods have developed exponentially. It has become apparent that when responding to international consumers through multiple platforms and speaking in the same language in which the consumers express themselves, companies are improving their standings within the public sphere. Natural Language Processing for Global and Local Business provides research exploring the theoretical and practical phenomenon of natural language processing through different languages and platforms in terms of today's conditions. Featuring coverage on a broad range of topics such as computational linguistics, information engineering, and translation technology, this book is ideally designed for IT specialists, academics, researchers, students, and business professionals seeking current research on improving and understanding the consumer experience.

One of the goals of artificial intelligence (AI) is creating autonomous agents that must make decisions based on uncertain and incomplete information. The goal is to design rational agents that must take the best action given the information available and their goals. Decision Theory Models for Applications in Artificial Intelligence: Concepts and Solutions provides an introduction to different types of decision theory techniques, including MDPs, POMDPs, Influence Diagrams, and Reinforcement Learning, and illustrates their application in artificial intelligence. This book provides insights into the advantages and challenges of using decision theory models for developing intelligent systems.

'With Willful Intent: A Theology of Sin' is a full orbed examination of sin and the human Fall. Its intention is to provide the reader/student with both the materials and methodology to formulate his or her own biblically based theology of sin. The book is arranged in four sequential sections to guide the reader through the process of theological development. The first section, "A Historical Theology of Sin," furnishes a detailed outline of Christian thought on sin from the time of the early church to the present day. These chapters will help the reader to understand why so many differing views of sin and the Fall exist. The second section, "A Biblical Theology of Sin," is the keystone of theological formulation. It apprises the student of the biblical teaching on the human Fall and its subsequent ramifications. Because believers hold the Bible to be the fully inspired, all-sufficient Word of God, what it says about sin must be determinative in one's development of a theology of sin. The third section, "A Systematic Theology of Sin," seeks to synthesize the teaching of the Bible while drawing on the insights of history, science, and the social sciences. Topics covered include the nature of sin, its universality, its transmission, its relationship to Satan and the demonic, and its conquest through Jesus Christ. Any theology is worthless if it cannot be related to daily living. The conclusion, "A Practical Theology of Sin," demonstrates how the theology which has been formulated may be applied to the individual life of the believer and to the church's ministry.

Many approaches have sprouted from artificial intelligence (AI) and produced major breakthroughs in the computer science and engineering industries. Deep learning is a method that is transforming the world of data and analytics. Optimization of this new approach is still unclear, however, and there’s a need for research on the various applications and techniques of deep learning in the field of computing. Deep Learning Techniques and Optimization Strategies in Big Data Analytics is a collection of innovative research on the methods and applications of deep learning strategies in the fields of computer science and information systems. While highlighting topics including data integration, computational modeling, and scheduling systems, this book is ideally designed for engineers, IT specialists, data analysts, data scientists, engineers, researchers, academicians, and students seeking current research

on deep learning methods and its application in the digital industry.
"This book provides a general overview about research on ubiquitous and pervasive computing and its applications, discussing the recent progress in this area and pointing out to scholars what they should do (best practices) and should not do (bad practices)"--Provided by publisher.
"This book addresses the newest innovative and intelligent applications related to utilizing the large amounts of big data being generated that is increasingly driving decision making and changing the landscape of business intelligence, from governments to private organizations, from communities to individuals"--

Cyber-physical systems (CPS) have emerged as a unifying name for systems where cyber parts (i.e., the computing and communication parts) and physical parts are tightly integrated, both in design and during operation. Such systems use computations and communication deeply embedded in and interacting with human physical processes as well as augmenting existing and adding new capabilities. As such, CPS is an integration of computation, networking, and physical processes. Embedded computers and networks monitor and control the physical processes, with feedback loops where physical processes affect computations and vice versa. The economic and societal potential of such systems is vastly greater than what has been realized, and major investments are being made worldwide to develop the technology.

Artificial Intelligence Paradigms for Smart Cyber-Physical Systems focuses on the recent advances in Artificial intelligence-based approaches towards affecting secure cyber-physical systems. This book presents investigations on state-of-the-art research issues, applications, and achievements in the field of computational intelligence paradigms for CPS. Covering topics that include autonomous systems, access control, machine learning, and intrusion detection and prevention systems, this book is ideally designed for engineers, industry professionals, practitioners, scientists, managers, students, academicians, and researchers seeking current research on artificial intelligence and cyber-physical systems.

Recent advancements in imaging techniques and image analysis has broadened the horizons for their applications in various domains. Image analysis has become an influential technique in medical image analysis, optical character recognition, geology, remote sensing, and more. However, analysis of images under constrained and unconstrained environments require efficient representation of the data and complex models for accurate interpretation and classification of data. Deep learning methods, with their hierarchical/multilayered architecture, allow the systems to learn complex mathematical models to provide improved performance in the required task.

The **Handbook of Research on Deep Learning-Based Image Analysis Under Constrained and Unconstrained Environments** provides a critical examination of the latest advancements, developments, methods, systems, futuristic approaches, and algorithms for image analysis and addresses its challenges. Highlighting concepts, methods, and tools including convolutional neural networks, edge enhancement, image segmentation, machine learning, and image processing, the book is an essential and comprehensive reference work for engineers, academicians, researchers, and students.