

# Reading free Linear parameter varying control for engineering applications springerbriefs in electrical and computer engineering (Download Only)

Additive Manufacturing: Design, Processes and Applications Riemannian Optimization and Its Applications Competition-Based Neural Networks with Robotic Applications Basic Theory Important Applications of the Behrens-Fisher Statistic and the False Discovery Rate Power-Based Study of Boundary Layer Ingestion for Aircraft Application Applications of Artificial Intelligence Techniques in Industry 4.0 New Insights in Photocatalysis for Environmental Applications Applications of Artificial Intelligence in Tunnelling and Underground Space Technology A Review of Biomaterials and Their Applications in Drug Delivery Acoustic-Based Applications for Vertebrate Vocalization Nocturnal Cooling Technology for Building Applications Tunable Low-Power Low-Noise Amplifier for Healthcare Applications Blockchain Foundations and Applications IT Applications for Sustainable Living Self-powered Energy Harvesting Systems for Health Supervising Applications Extremophiles: Applications in Nanotechnology Acoustic Sensors for Biomedical Applications Plastics End Use Applications State of the Art in Digital Media and Applications Learning Mathematics in a Mobile App-Supported Math Trail Environment An Introduction to Random Currents and Their Applications Bayesian Optimization with Application to Computer Experiments Privacy-Enhancing Fog Computing and Its Applications Intelligent Speech Signal Processing Massive MIMO in 5G Networks: Selected Applications Dental Gold Alloys and Gold Nanoparticles for Biomedical Applications Endometrial Stem Cells and Its Potential Applications Butterfly Optimization Algorithm: Theory and Engineering Applications Thin-Walled Composite Protective Structures for Crashworthiness Applications Biosensors and Invasive Monitoring in Clinical Applications Biomaterials and Their Applications Multiresolution Approach to Processing Images for Different Applications Modern Approach to Educational Data Mining and Its Applications Inflammation: Natural Resources and Its Applications Reconfigurable Cellular Neural Networks and Their Applications Research and Development in the Academy, Creative Industries and Applications Graphene Oxide: Physics and Applications Entropy Guided Transformation Learning: Algorithms and Applications Permittivity and Permeability Tensors for Cloaking Applications

## Additive Manufacturing: Design, Processes and Applications

2023-07-01

this book is a comprehensive guide to additive manufacturing and product development it offers a practical reader friendly approach to integrating the stages of product development it covers current design and manufacturing strategies with a step by step approach divided into three pillars design processes and applications the book addresses the challenges hindering the industrial application of am and provides a roadmap for its successful implementation it discusses specific am case studies and hybrid am cell and production line setups with the goal of achieving high quality low cost products that are both flexible and productive the book concludes with an examination of industry 4.0 capabilities in decentralized manufacturing it is aimed to be read by researchers and professionals in industry who are interested in the development and potential of additive manufacturing and will help to lead to wider adoption of am

## Riemannian Optimization and Its Applications

2021-02-17

this brief describes the basics of riemannian optimization optimization on riemannian manifolds introduces algorithms for riemannian optimization problems discusses the theoretical properties of these algorithms and suggests possible applications of riemannian optimization to problems in other fields to provide the reader with a smooth introduction to riemannian optimization brief reviews of mathematical optimization in euclidean spaces and riemannian geometry are included riemannian optimization is then introduced by merging these concepts in particular the euclidean and riemannian conjugate gradient methods are discussed in detail a brief review of recent developments in riemannian optimization is also provided riemannian optimization methods are applicable to many problems in various fields this brief discusses some important applications including the eigenvalue and singular value decompositions in numerical linear algebra optimal model reduction in control engineering and canonical correlation analysis in statistics

## Competition-Based Neural Networks with Robotic Applications

2017-05-30

focused on solving competition based problems this book designs proposes develops analyzes and simulates various neural network models depicted in centralized and distributed manners specifically it defines four different classes of centralized models for investigating the resultant competition in a group of multiple agents with regard to distributed competition with limited communication among agents the book presents the first distributed wta winners take all protocol which it subsequently extends to the distributed coordination control of multiple robots illustrations tables and various simulative examples as well as a healthy mix of plain and professional language are used to explain the concepts and complex principles involved thus the book provides readers in neurocomputing and robotics with a deeper understanding of the neural network approach to competition based problem solving offers them an accessible introduction to modeling technology and the distributed coordination control of redundant robots and equips them to use these technologies and approaches to solve concrete scientific and engineering problems

### Basic Theory

2019-02-19

this multi volume handbook is the most up to date and comprehensive reference work in the field of fractional calculus and its numerous applications this first volume collects authoritative chapters covering the mathematical theory of fractional calculus including fractional order operators integral transforms and equations special functions calculus of variations and probabilistic and other aspects

### ***Important Applications of the Behrens-Fisher Statistic and the False Discovery Rate***

2022-06-16

this book discusses important applications of the behrens fisher statistic and the false discovery rate fdr covered applications include anova and manova under potentially non normal errors and heteroscedasticity and an intuitive method of analyzing s x r contingency tables

when the column variable is ordinal this book also explores the novel possibility that these applications may be deemed nonparametric

## **Power-Based Study of Boundary Layer Ingestion for Aircraft Application**

2022-09-14

this book presents research on boundary layer ingestion bli bli is an aircraft engine integration technique that aims at integrating the aircraft and the propulsion system such that the overall aircraft fuel consumption can be reduced in this research theoretical analysis suggests that the minimization of total power consumption should be used as a design criterion for aircraft utilizing bli rather than focusing on the minimization of drag numerical simulations are performed and the simulation results are processed using the pbm to support the theoretical analysis furthermore an experimental study is carried out with a focus on the power conversion processes involved for a propulsor operating in the wake stereoscopic piv is employed in order to visualize the flow and understand the physics the so called power based method is used to quantify the power conversion mechanisms the results prove that the dominant mechanism responsible for the efficiency enhancement is due to the utilization of body wake energy by the wake ingesting propeller in short the importance of wake energy flow rate in understanding the bli phenomenon is highlighted this book will be useful for researchers in the field of aircraft propulsion aircraft aerodynamics and airframe propulsion integration

## **Applications of Artificial Intelligence Techniques in Industry 4.0**

2018-09-25

this book is to presents and evaluates a way of modelling and optimizing nonlinear rfid network planning rnp problems using artificial intelligence techniques it uses artificial neural network models ann to bind together the computational artificial intelligence algorithm with knowledge representation an efficient artificial intelligence paradigm to model and optimize rfid networks this effort leads to proposing a novel artificial intelligence algorithm which has been named hybrid artificial intelligence optimization technique to perform optimization of rnp as a hard learning problem this hybrid optimization technique consists of two different optimization phases first phase is optimizing rnp by redundant antenna elimination rae algorithm and the second phase which completes rnp optimization process is ring probabilistic logic neural networks rplnn the hybrid paradigm is explored using a flexible manufacturing system fms and the

results are compared with well known evolutionary optimization technique namely genetic algorithm ga to demonstrate the feasibility of the proposed architecture successfully

## ***New Insights in Photocatalysis for Environmental Applications***

2022-04-21

this book explains the basic and fundamental aspects of nanotechnology and the potential use of nanostructured photocatalysts in various applications especially in the context of the environment and energy harvesting it describes the preparation and characterization of unique nanostructured photocatalysts and provides details of their catalytic action and also discusses the design of new types of photocatalysts with controlled nanostructures given its broad scope the book will appeal to academic and industrial researchers interested in heterogeneous photocatalysis sustainable chemistry energy conversion and storage nanotechnology chemical engineering environmental protection optoelectronics sensors and surface and interface science

## ***Applications of Artificial Intelligence in Tunnelling and Underground Space Technology***

2021-03-13

this book covers the tunnel boring machine tbm performance classifications empirical models statistical and intelligent based techniques which have been applied and introduced by the researchers in this field in addition a critical review of the available tbm performance predictive models will be discussed in details then this book introduces several predictive models i e statistical and intelligent techniques which are applicable powerful and easy to implement in estimating tbm performance parameters the introduced models are accurate enough and they can be used for prediction of tbm performance in practice before designing tbms

## ***A Review of Biomaterials and Their Applications in Drug Delivery***

2018-07-12

this book reviews drug delivery systems as mechanisms to introduce therapeutic agents into the body to help or improve tissue function and examines different drug delivery systems applied in various organs to date polymeric systems ceramic particles or composites have been used in different applications such as injectable coatings of implants scaffolds or implantable devices such systems should be able to retain the therapeutic agent and release it in uniform amounts at a specific time

## **Acoustic-Based Applications for Vertebrate Vocalization**

2021-11-30

acoustic based applications for vertebrate vocalization is designed to help researchers improve their findings and knowledge of vertebrate vocalization by focusing on the integration of acoustic features with new technologies such as the internet of things iot cloud computing and virtual and cognitive reality the book addresses the most common challenges in vertebrate vocalization based research via suitable audio signal processing techniques data collection data pre processing acoustic feature engineering extraction and selection for multidisciplinary applications i e feature classification vertebrate communication behavioral analysis and signal pattern analysis the book is an important reference for scholars researchers industry practitioners teachers and students across a number of disciplines including bioengineering audio engineering systems engineering biotechnology signal processing biology zoology and animal sciences

## **Nocturnal Cooling Technology for Building Applications**

2019-03-28

this book discusses nocturnal cooling technologies for building applications exploiting the natural environment as a renewable and sustainable resource has become a significant strategy for passive energy saving in buildings and has led to growing interest in the use of passive radiative cooling based on nighttime nocturnal and daytime diurnal operating periods of these nocturnal cooling is more promising since diurnal cooling is hard to achieve due to the solar radiation effect as such this book provides a comprehensive overview of nocturnal cooling for building applications including a definition concepts and principles materials and devices and cooling systems and configurations

## ***Tunable Low-Power Low-Noise Amplifier for Healthcare Applications***

2021-03-19

this book consists of the research design and implementation from sizing to layout with parasitic extraction and yield estimation of a low power low noise amplifier for biomedical and healthcare applications of bio potential signals particularly focusing on the electromyography and electrooculography these signals usually operate in different broadbands yet follow an impulse shape transmission hence being suitable to be applied and detected by the same receiver

## ***Blockchain Foundations and Applications***

2022-08-20

this monograph provides a comprehensive and rigorous exposition of the basic concepts and most important modern research results concerning blockchain and its applications the book includes the required cryptographic fundamentals underpinning the blockchain technology since understanding of the concepts of cryptography involved in the design of blockchain is necessary for mastering the security guarantees furnished by blockchain it also contains an introduction to cryptographic primitives and separate chapters on bitcoin ethereum and smart contracts public blockchain private blockchain cryptocurrencies and blockchain applications this volume is of great interest to active researchers who are keen to develop novel applications of blockchain in the field of their investigation further it is also beneficial for industry practitioners as well as undergraduate students in computing and information technology

## ***IT Applications for Sustainable Living***

2022-09-29

this book highlights the current and recent state of the art developments in energy harvesting systems for health supervising applications it explores the exciting potential of energy harvesting as a crosscutting field of research to intersect with other areas to envisage new products solutions and applications among all these new opportunities for synergy there is a research area that fully

matches the features offered by energy harvesting with its power supply's main needs health supervising hs which consists of monitoring the health or operating conditions of anything such as structures buildings public health environment etc the book covers the hand in hand evolution towards a new paradigm truly self powered devices based on a single transducer acting as a sensor and as power source simultaneously and efficiently this evolution is illustrated by the concept and implementation of novel state of the art architecture for self powered energy harvesting systems for applications that range from structural health monitoring to point of care medical devices

## **Self-powered Energy Harvesting Systems for Health Supervising Applications**

2016-09-29

this book discusses the extremophiles explored for biosynthesis of nanoparticles nanotechnology is a widely emerging field involving interdisciplinary subjects such as biology physics chemistry and medicine a wide variety of microorganisms such as bacteria fungi and algae are employed as biological agents for the synthesis of nanoparticles novel routes by which extremophiles can be employed to generate nanoparticles have yet to be discovered the book is divided into 5 major chapters 1 major types of nanoparticles in nanotechnology 2 diversity of microbes in the synthesis of nanoparticles 3 extremophiles in nanoparticle biosynthesis 4 applications of nanoparticles produced by extremophiles 5 challenges and future perspectives

## **Extremophiles: Applications in Nanotechnology**

2018-07-20

in this book application related studies for acoustic biomedical sensors are covered in depth the book features an array of different biomedical signals including acoustic biomedical signals as well as the thermal biomedical signals magnetic biomedical signals and optical biomedical signals to support healthcare it employs signal processing approaches such as filtering fourier transform spectral estimation and wavelet transform the book presents applications of acoustic biomedical sensors and bio signal processing for prediction detection and monitoring of some diseases from the phonocardiogram pcg signal analysis several challenges and future perspectives related to the acoustic sensors applications are highlighted this book supports the engineers researchers designers and physicians in several



interdisciplinary domains that support healthcare

## **Acoustic Sensors for Biomedical Applications**

2011-08-04

plastics end use applications is a springerbrief designed to keep professionals in the plastics industry abreast of key technical developments business strategies and marketing initiatives in plastics and competitive materials that impact sales and usage it is concisely focused on the five major competitive material areas plastic metal paper and wood rubber and glass and ceramic and how they interact in the twenty major plastic end use market segments for the global plastics professional this book offers a way to enhance plastics technical and marketing insights plastics end use applications is of most value to manufacturing engineers research and development professionals and general researchers interested in plastics and materials science

## **Plastics End Use Applications**

2017-08-25

this book presents the user facing aspects of digital media from the web and computer games to mobile technologies and social media and demonstrates how these are continuously growing and developing the convergence of it telecommunications and media is bringing about a revolution in the way information is collected stored accessed and distributed rae earnshaw s book explores the principal factors driving this and the ways in which social and cultural contexts are affected by media content this is professor earnshaw s fourth book in a series that focuses on digital media and creativity and through the use of case studies the theoretical practical and technical aspects of digital media are examined readers are informed about how the user as content creator publisher and broadcaster is changing the traditional roles of news media publishers and entertainment corporations topics such as the evolution of digital imaging and the phenomenon of social media are discussed in relation to this professor earnshaw also demonstrates how changes in technology produce shifts in the ways that consumers utilize it in an increasing variety of application domains such as e books digital cameras facebook and twitter state of the art in digital media and applications will be invaluable for readers that want a comprehensive look at how emerging digital media technologies are being used and how they are transforming how we create consume exchange and manipulate media

content

## ***State of the Art in Digital Media and Applications***

2018-07-19

this brief presents the results of a study on the development of the mobile app supported math trail program for learning mathematics this study is a part of the mathcitymap project a project of the matis i team from idmi goethe universität frankfurt germany that comprises math trails around the city that are supported by the use of gps enabled mobile phone technology the project offers an activity that is designed to support students in constructing their own mathematical knowledge by solving the prepared mathematical tasks on the math trail and interacting with the environment including the digital environment the brief focuses specifically on the development of a model for a mobile app supported math trail programme and the implementation of this programme in indonesia it offers both an empirical exploration of its implementation as well as critical assessment of students motivation in mathematics their own performance as well as teachers mathematics beliefs it concludes with a future forward perspective by recommending strategies for implementation in schools among the general public of the existing math trails including its supporting tool it also discusses strategies for developing and designing new trails and suggests further research in other geographical regions and contexts for continued project development and implementation learning mathematics in a mobile app supported math trail environment articulates an innovative and exciting future for integrating real mathematical tasks and geographic and digital environment into effective mathematics education

## **Learning Mathematics in a Mobile App-Supported Math Trail Environment**

2018-08-02

this book introduces random currents by presenting underlying mathematical methods necessary for applications the theory of currents is an advanced topic in geometric measure theory that extends distribution to linear functionals within the space of differential forms of any order methods to extend random distributions to random currents are introduced and analyzed in this book beginning with an overview of mathematical aspects of the theory of currents this book moves on to examine applications in medicine material science and image analysis applied researchers will find the practical modern mathematical methods along with the detailed appendix useful to

stimulate new applications and research

## **An Introduction to Random Currents and Their Applications**

2021-10-04

this book introduces readers to bayesian optimization highlighting advances in the field and showcasing its successful applications to computer experiments r code is available as online supplementary material for most included examples so that readers can better comprehend and reproduce methods compact and accessible the volume is broken down into four chapters chapter 1 introduces the reader to the topic of computer experiments it includes a variety of examples across many industries chapter 2 focuses on the task of surrogate model building and contains a mix of several different surrogate models that are used in the computer modeling and machine learning communities chapter 3 introduces the core concepts of bayesian optimization and discusses unconstrained optimization chapter 4 moves on to constrained optimization and showcases some of the most novel methods found in the field this will be a useful companion to researchers and practitioners working with computer experiments and computer modeling additionally readers with a background in machine learning but minimal background in computer experiments will find this book an interesting case study of the applicability of bayesian optimization outside the realm of machine learning

## **Bayesian Optimization with Application to Computer Experiments**

2018-11-12

this springerbrief covers the security and privacy challenges in fog computing and proposes a new secure and privacy preserving mechanisms to resolve these challenges for securing fog assisted iot applications chapter 1 introduces the architecture of fog assisted iot applications and the security and privacy challenges in fog computing chapter 2 reviews several promising privacy enhancing techniques and illustrates examples on how to leverage these techniques to enhance the privacy of users in fog computing specifically the authors divide the existing privacy enhancing techniques into three categories identity hidden techniques location privacy protection and data privacy enhancing techniques the research is of great importance since security and privacy problems faced by fog computing impede the healthy development of its enabled iot applications with the advanced privacy enhancing techniques the authors

propose three secure and privacy preserving protocols for fog computing applications including smart parking navigation mobile crowdsensing and smart grid chapter 3 introduces identity privacy leakage in smart parking navigation systems and proposes a privacy preserving smart parking navigation system to prevent identity privacy exposure and support efficient parking guidance retrieval through road side units fogs with high retrieving probability and security guarantees chapter 4 presents the location privacy leakage during task allocation in mobile crowdsensing and propose a strong privacy preserving task allocation scheme that enables location based task allocation and reputation based report selection without exposing knowledge about the location and reputation for participants in mobile crowdsensing chapter 5 introduces the data privacy leakage in smart grid and proposes an efficient and privacy preserving smart metering protocol to allow collectors fogs to achieve real time measurement collection with privacy enhanced data aggregation finally conclusions and future research directions are given in chapter 6 this brief validates the significant feature extension and efficiency improvement of iot devices without sacrificing the security and privacy of users against dishonest fog nodes it also provides valuable insights on the security and privacy protection for fog enabled iot applications researchers and professionals who carry out research on security and privacy in wireless communication will want to purchase this springerbrief also advanced level students whose main research area is mobile network security will also be interested in this springerbrief

## Privacy-Enhancing Fog Computing and Its Applications

2019-06-15

intelligent speech signal processing investigates the utilization of speech analytics across several systems and real world activities including sharing data analytics related information creating collaboration networks between several participants and implementing video conferencing in different application areas it provides a forum for readers to discover the characteristics of intelligent speech signal processing systems across different domains chapters focus on the latest applications of speech data analysis and management tools across different recording systems the book emphasizes the multi disciplinary nature of the field presenting different applications and challenges with extensive studies on the design implementation development and management of intelligent systems neural networks and related machine learning techniques for speech signal processing highlights different data analytics techniques in speech signal processing including machine learning and data mining illustrates different applications and challenges across the design implementation and management of intelligent systems and neural networks techniques for speech signal processing includes coverage of biomodal speech recognition voice activity detection spoken language and speech disorder identification automatic speech to speech summarization

and convolutional neural networks

## ***Intelligent Speech Signal Processing***

2017-12-21

this springerbrief focuses mainly on the basic theory and applications of massive mimo in 5g networks the significance of massive mimo for 5g or future communications is first briefly discussed then the basic theory of massive mimo technology is comprehensively analyzed i e a variety of 5g scenarios and their improvements are described when massive mimo is taken into account art physical layer techniques and various networking techniques for interference mitigation and resource scheduling are introduced as well this springerbrief also examines the selected applications of massive mimo in 5g networks i e massive mimo aided millimeter communications and energy transfer the physical layer design multiple access control mac mechanism and networking techniques are discussed for millimeter wave communications aided by massive mimo technology then massive mimo is covered for hybrid information and energy transfer a downlink precoder and a uplink pilot scheme is proposed for single cell networks and both non cooperative and cooperative energy transfer in multi cell are presented communication researchers in the area of mimo technology as well as researchers and practitioners working in millimeter communications and energy transfer seeking new research topics and topic areas with communication system design centralized and distributed algorithms will find this brief useful as a reference advanced level students studying communication engineering will also find this book useful as a secondary text

## **Massive MIMO in 5G Networks: Selected Applications**

2022-04-11

this book focuses on recent advances in dental gold alloys and gold nanoparticles gnps for biomedical applications dental gold alloys combine several highly desirable mechanical properties such as high strength ductility and elasticity with an extremely robust chemical stability in the mouth moreover astonishing progress has been made in the use of gnps as novel gold biomaterials that provide a multifunctional platform for cellular imaging biosensing and targeted drug delivery in tumour immunotherapy and photothermal therapy beginning with a comprehensive overview of the development and use of dental gold alloys the book addresses the materials

properties that are crucial for dental applications focusing on aspects such as microstructure chemical and mechanical stability ageing biocompatibility and colour retention the book then shifts focus to the use of gnps in dental applications delving into different techniques of gnp synthesis for specifically tailoring the size shape and stability of gnps in biological media in addition to these factors it addresses how their exposure route surface chemistry as well as how the steric effects of their coating impact biodistribution and determine the level of gnp toxicity in the human body featuring topical literature reviews alongside up to date published experimental results this book offers an attractive resource for practicing scientists and engineers working in the field of gold based biomaterials

## **Dental Gold Alloys and Gold Nanoparticles for Biomedical Applications**

2016-02-09

stem cells have ushered in widespread interest and exciting possibilities for cell based therapies despite multiple initiatives and meticulous untiring efforts translating this bench side research into bedside practice and therapies remains a challenge a better understanding of expanding research in specific areas of stem cells is crucial in developing regenerative medical therapeutics with their unique attributes studies on stem cells of endometrium and its therapeutic applications at both in vitro and at pre clinical settings in health and disease states are gaining consensus in recent years this springerbrief provides a thorough but succinct presentation of solid information about the significance of stem cells from the endometrium the inner lining of the uterus it presents an understanding of stem cells derived from human endometrium and examine how cells from these sources are being used to research and therapeutics for various clinical problems and diseases in addition brief also discusses the threats and challenges facing endometrium overall it illuminates the hope that the stem cells of endometrium can be an effective source of therapeutics for a multitude of disorders

## ***Endometrial Stem Cells and Its Potential Applications***

2022-07-18

this book presents theory and applications of recently introduced butterfly optimization algorithm boa it also highlights hybridization process in the basic structure of boa with in depth analysis of complexity this book also describes the constraint handling process the newly introduced variant is implemented and validated on a set of linear and nonlinear real works problems of engineering and pulp

and paper industry the simulated results are compared with most of the basic algorithms comparative and nonparametric statistical result analysis illustrates the efficacy of the algorithm

## ***Butterfly Optimization Algorithm: Theory and Engineering Applications***

2023-09-17

this book summarizes many of the recent advances in the design and application of thin walled composite protective structures the past few decades have seen outstanding advances in the use of composite materials in structural applications composites have revolutionized traditional design concepts and made possible an unparalleled range of new and exciting possibilities as viable materials for construction this book presents an extensive survey on recent improvements in the research and development of composites and biocomposites that are used to make structures in various applications this book deals with design research and development studies experimental investigations theoretical analysis and fabrication techniques relevant to the application of composites in load bearing components for assemblies ranging from individual components such as plates and shells to complete composite structures this book also focuses the recent advances in biocomposite materials from renewable resources and introduces a potential application of this material the content is this book benefits the academics researchers scientists engineers and students in the field of epoxy blends for application as lightweight advanced composite structures

## **Thin-Walled Composite Protective Structures for Crashworthiness Applications**

2013-04-23

this volume examines the advances of invasive monitoring by means of biosensors and microdialysis physical and physiological parameters are commonly monitored in clinical settings using invasive techniques due to their positive outcome in patients diagnosis and treatment biochemical parameters however still rely on off line measurements and require large pieces of equipment biosensing and sampling devices present excellent capabilities for their use in continuous monitoring of patients biochemical parameters however certain issues remain to be solved in order to ensure a more widespread use of these techniques in today s medical practices

## **Biosensors and Invasive Monitoring in Clinical Applications**

2015-04-30

this short book presents an overview of different types of biomaterial such as bio ceramics bio polymers metals and bio composites while especially focusing on nano biomaterials and their applications in different tissues it provides a compact introduction to nano materials for drug delivery systems tissue engineering and implants while also reviewing essential trends in the biomaterial field over the last few decades and the latest developments

## ***Biomaterials and Their Applications***

2014-12-27

this book presents theoretical and practical aspects of the interaction between low and high level image processing multiresolution analysis owes its popularity mostly to wavelets and is widely used in a variety of applications low level image processing is important for the performance of many high level applications the book includes examples from different research fields i e video surveillance biomedical applications emg and x ray improved communication namely teleoperation telemedicine animation augmented virtual reality and robot vision monitoring of the condition of ship systems and image quality control

## ***Multiresolution Approach to Processing Images for Different Applications***

2021-01-22

this book emphasizes that learning efficiency of the learners can be increased by providing personalized course materials and guiding them to attune with suitable learning paths based on their characteristics such as learning style knowledge level emotion motivation self efficacy and many more learning ability factors in e learning system learning is a continuous process since human evolution in fact it is related to life and innovations the basic objective of learning to grow aspire and develop ease of life remains the same despite changes in the learning methodologies introduction of computers empowered us to attain new zenith in knowledge domain developed pragmatic



approach to solve life's problem and helped us to decipher different hidden patterns of data to get new ideas of late computers are predominantly used in education its process has been changed from offline to online in view of enhancing the ease of learning with the advent of information technology e learning has taken centre stage in educational domain in e learning context developing adaptive e learning system is buzzword among contemporary research scholars in the area of educational data mining edm enabling personalized systems is meant for improvement in learning experience for learners as per their choices made or auto detected needs it helps in enhancing their performance in terms of knowledge skills aptitudes and preferences it also enables speeding up the learning process qualitatively and quantitatively these objectives are met only by the personalized adaptive e learning systems in this regard many noble frameworks were conceptualized designed and developed to infer learning style preferences and accordingly learning materials were delivered adaptively to the learners designing frameworks help to measure learners preferences minutely and provide adaptive learning materials to them in a way most appropriately

## **Modern Approach to Educational Data Mining and Its Applications**

2014-12-04

inflammation is the very natural process of our body it does its work immediately and smoothly along with lots of helpers inflammation is linked to immune system as acute inflammatory or pro inflammatory phase through macrophage activation this book is for researchers and scholars in the field of life sciences and medical sciences the book contains all inflammatory sources around the world it emphasizes on anti inflammatory sources along with its active inflammatory constituents and other medicinal uses with authentic references anti inflammation is a kind of activity which is found in nearly all of the natural sources used for major biological activities so the book helps them to correlate their activity of interest with anti inflammatory source the present work deals with illustrative representation of inflammation causes of inflammation inflammatory mediators anti inflammatory sources other uses and inflammation and lifestyle it mainly provides the researchers the updated information from the ancient to the most recent ongoing research on inflammation this book imparts pace to their idea of thinking assist to make clear predictions before proceeding to research the introduction includes natural sources of inflammation and its benefits the sources are from plant animal and marine the book tells how these sources are useful for us to cure several diseases and opens new path for further research inflammation part of the book is well presented along with its phases types and other diseases interrelated with inflammation inflammatory mediators the foremost player of inflammation are defined in a very pleasant and convenient manner the chapter includes both cell derived and plasma derived mediators illustratively with their

synthesis and action natural source of anti inflammation is the heart chapter of this book which contains all anti inflammation sources from plants marine and animals this chapter also contains short description of most of the sources its availability and uses the authors have also added inflammatory models for assessment of biological activities of natural sources both in vitro and in vivo inflammation free lifestyle is described very nicely in the book the contents are very specific and relevant to its topic all the data provided is unique and useful the anti inflammatory table includes sources plant parts used active constituents and other uses this data provides ample information regarding anti inflammatory research and innovation the highlights of this book shall be describes almost all anti inflammatory sources around the globe at one place in a more convenient tabulated form illustrative representation makes the book more attractive and interactive

## Inflammation: Natural Resources and Its Applications

2019-04-15

this book explores how neural networks can be designed to analyze sensory data in a way that mimics natural systems it introduces readers to the cellular neural network cnn and formulates it to match the behavior of the wilson cowan model in turn two properties that are vital in nature are added to the cnn to help it more accurately deliver mimetic behavior randomness of connection and the presence of different dynamics excitatory and inhibitory within the same network it uses an id matrix to determine the location of excitatory and inhibitory neurons and to reconfigure the network to optimize its topology the book demonstrates that reconfiguring a single layer cnn is an easier and more flexible solution than the procedure required in a multilayer cnn in which excitatory and inhibitory neurons are separate and that the key cnn criteria of a spatially invariant template and local coupling are fulfilled in closing the application of the authors neuron population model as a feature extractor is exemplified using odor and electroencephalogram classification

## ***Reconfigurable Cellular Neural Networks and Their Applications***

2017-03-07

this book examines how creativity feeds through into typical application areas and the lessons that can be learned from this a number of

case studies in creative and general application domains are included which illustrate how the academy and industry can collaborate to mutual benefit and advantage it also examines the pros and cons of the collaboration and what lessons can be learned from successes or failures in aspects of the implementation and delivery the academy has played a key role in the past in the research and development of key ideas and patents that have been migrated into successful industrial products and services and continues to do so a variety of models of interaction between the academy and industry have been developed depending on the circumstances of the institution its mission its values its expertise and its relationship to the local and cultural environment in which it is situated these models are reviewed and evaluated the process of initial idea through to design and successful implementation is a pipeline if this process requires the involvement of technology as is more often the case as creative applications are increasingly dependent on technology then there is need to understand how this can efficiently and optimally be done a number of factors tend to be generic and permeate many application areas such as bandwidth requirements use of colour interaction methods whilst others are more customized with specialist hardware and software e g shared virtual environments augmented reality

## ***Research and Development in the Academy, Creative Industries and Applications***

2014-10-23

this book gives a comprehensive overview of graphene oxides go from atomic structures and fundamental properties to technological applications atomic structural models electronic properties mechanical properties optical properties and functionalizing and compositing of go are illustrated moreover the excellent physical and chemical properties offer go promising applications in electronic nanodevices chemical sensors and catalyst energy storage and biotechnology which are also presented in this book therefore this book is of interest to researchers in physics chemistry materials science and nanoscience

## **Graphene Oxide: Physics and Applications**

2012-03-16

entropy guided transformation learning algorithms and applications etl presents a machine learning algorithm for classification tasks etl generalizes transformation based learning tbl by solving the tbl bottleneck the construction of good template sets etl automatically

generates templates using decision tree decomposition the authors describe etl committee an ensemble method that uses etl as the base learner experimental results show that etl committee improves the effectiveness of etl classifiers the application of etl is presented to four natural language processing nlp tasks part of speech tagging phrase chunking named entity recognition and semantic role labeling extensive experimental results demonstrate that etl is an effective way to learn accurate transformation rules and shows better results than tbl with handcrafted templates for the four tasks by avoiding the use of handcrafted templates etl enables the use of transformation rules to a greater range of tasks suitable for both advanced undergraduate and graduate courses entropy guided transformation learning algorithms and applications provides a comprehensive introduction to etl and its nlp applications

## Entropy Guided Transformation Learning: Algorithms and Applications

2015-09-22

this book is focused on derivations of analytical expressions for stealth and cloaking applications an optimal version of electromagnetic em stealth is the design of invisibility cloak of arbitrary shapes in which the em waves can be controlled within the cloaking shell by introducing a prescribed spatial variation in the constitutive parameters the promising challenge in design of invisibility cloaks lies in the determination of permittivity and permeability tensors for all the layers this book provides the detailed derivation of analytical expressions of the permittivity and permeability tensors for various quadric surfaces within the eleven eisenhart co ordinate systems these include the cylinders and the surfaces of revolutions the analytical modeling and spatial metric for each of these surfaces are provided along with their tensors this mathematical formulation will help the em designers to analyze and design of various quadratics and their hybrids which can eventually lead to design of cloaking shells of arbitrary shapes

## **Permittivity and Permeability Tensors for Cloaking Applications**

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