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Science Signal and Image Processing for Remote Sensing Diluted Magnetic Semiconductors *Physics Briefs* **Citizen Action For Global Change Reports and Working Papers Water Diplomacy** Emerging Trends in Information and Communication Security **Advanced Concepts for Intelligent Vision Systems Report - Naval Ship Research and Development Center Secondary Analysis of Electronic Health Records** *Hedge Funds and the Financial Market* **Eighth IEEE International Conference on Computer Vision The Routledge Handbook of Heritage Language Education**

an introduction to a powerful and flexible network modeling tool for developing and understanding complex systems with many examples from a range of industries design structure matrix dsm is a straightforward and flexible modeling technique that can be used for designing developing and managing complex systems dsm offers network modeling tools that represent the elements of a system and their interactions thereby highlighting the system s architecture or designed structure its advantages include compact format visual nature intuitive representation powerful analytical capacity and flexibility used primarily so far in the area of engineering management dsm is increasingly being applied to complex issues in health care management financial systems public policy natural sciences and social systems this book offers a clear and concise explanation of dsm methods for practitioners and researchers this book provides an innovative integrated and methodical approach to understanding complex financial models integrating topics usually presented separately into a comprehensive whole the book brings together financial models and high level

mathematics reviewing the mathematical background necessary for understanding these models organically and in context it begins with underlying assumptions and progresses logically through increasingly complex models to operative conclusions readers who have mastered the material will gain the tools needed to put theory into practice and incorporate financial models into real life investment financial and business scenarios modern finance s most bothersome shortcoming is that the two basic models for building an optimal investment portfolio markowitz s mean variance model and sharpe and treynor s capital asset pricing model capm fall short when we try to apply them using excel solver this book explores these two models in detail and for the first time in a textbook the black litterman model for building an optimal portfolio constructed from a small number of assets developed at goldman sachs is thoroughly presented the model s integration of personal views and its application using excel templates are demonstrated the book also offers innovative presentations of the modigliani miller model and the consumption based capital asset pricing model ccapm problems at the end of each chapter invite the reader to put the models into immediate use fundamental models in financial theory is suitable for classroom use or as a reference for finance practitioners this book trains the next generation of scientists representing different disciplines to leverage the data generated during routine patient care it formulates a more complete lexicon of evidence based recommendations and support shared ethical decision making by doctors with their patients diagnostic and therapeutic technologies continue to evolve rapidly and both individual practitioners and clinical teams face increasingly complex ethical decisions unfortunately the current state of medical

knowledge does not provide the guidance to make the majority of clinical decisions on the basis of evidence the present research infrastructure is inefficient and frequently produces unreliable results that cannot be replicated even randomized controlled trials rcts the traditional gold standards of the research reliability hierarchy are not without limitations they can be costly labor intensive and slow and can return results that are seldom generalizable to every patient population furthermore many pertinent but unresolved clinical and medical systems issues do not seem to have attracted the interest of the research enterprise which has come to focus instead on cellular and molecular investigations and single agent e g a drug or device effects for clinicians the end result is a bit of a data desert when it comes to making decisions the new research infrastructure proposed in this book will help the medical profession to make ethically sound and well informed decisions for their patients at the heart of these conflicts are complex water networks a detailed and up to date introduction to machine learning presented through the unifying lens of probabilistic modeling and bayesian decision theory this book offers a detailed and up to date introduction to machine learning including deep learning through the unifying lens of probabilistic modeling and bayesian decision theory the book covers mathematical background including linear algebra and optimization basic supervised learning including linear and logistic regression and deep neural networks as well as more advanced topics including transfer learning and unsupervised learning end of chapter exercises allow students to apply what they have learned and an appendix covers notation probabilistic machine learning grew out of the author s 2012 book machine learning a probabilistic perspective more than just a simple update this is

a completely new book that reflects the dramatic developments in the field since 2012 most notably deep learning in addition the new book is accompanied by online python code using libraries such as scikit learn jax pytorch and tensorflow which can be used to reproduce nearly all the figures this code can be run inside a web browser using cloud based notebooks and provides a practical complement to the theoretical topics discussed in the book this introductory text will be followed by a sequel that covers more advanced topics taking the same probabilistic approach philosophy of science deals with the problem what is science it seems that the answer to this question can only be found if we have an answer to the question how does science function thus the study of the methodology of social sciences is a prominent factor in any analysis of these sciences the history of philosophy shows clearly that the answer to the question how does science function was the conditio sine qua non of any kind of philosophy of science epistemology and even of logic aristotle hume kant mill russell to mention a few classical authors clearly emphasized the primacy of methodology of science for any kind of philosophy of science one may even state that analyses of the presup positions the foundations the aims goals and purposes of science are nothing else than analyses of their general and specific formal as well as practical and empirical methods thus the whole program of any phi losophy of science is dependent on the analysis of the methods of sciences and the establishment of their criteria if the study of scientific method is the predominant factor in the philosophy of science then all the other problems will depend on the outcome of such a study for example the old question of a possible unity of all social sciences will be brought to a solution by the study of the presuppositions the methods as

well as of the criteria germane to all social sciences this book constitutes the thoroughly refereed proceedings of the 16th international conference on advanced concepts for intelligent vision systems acivs 2015 held catania italy in october 2015 the 76 revised full papers were carefully selected from 129 submissions acivs 2015 is a conference focusing on techniques for building adaptive intelligent safe and secure imaging systems the focus of the conference is on following topic low level image processing video processing and camera networks motion and tracking security forensics and biometrics depth and 3d image quality improvement and assessment classification and recognition multidimensional signal processing multimedia compression retrieval and navigation choice outstanding academic title 1996 in hundreds of articles by experts from around the world and in overviews and road maps prepared by the editor the handbook of brain theory and neural networks charts the immense progress made in recent years in many specific areas related to great questions how does the brain work how can we build intelligent machines while many books discuss limited aspects of one subfield or another of brain theory and neural networks the handbook covers the entire sweep of topics from detailed models of single neurons analyses of a wide variety of biological neural networks and connectionist studies of psychology and language to mathematical analyses of a variety of abstract neural networks and technological applications of adaptive artificial neural networks expository material makes the book accessible to readers with varied backgrounds while still offering a clear view of the recent specialized research on specific topics the routledge handbook of heritage language education provides the rapidly growing and globalizing field of

heritage language hl education with a cohesive overview of hl programs and practices relating to language maintenance and development setting the stage for future work in the field driving this effort is the belief that if research and pedagogical advances in the hl field are to have the greatest impact hl programs need to become firmly rooted in educational systems against a background of cultural and linguistic diversity that characterizes the twenty first century the volume outlines key issues in the design and implementation of hl programs across a range of educational sectors institutional settings sociolinguistic conditions and geographical locations specifically north and latin america europe israel australia new zealand japan and cambodia all levels of schooling are included as the teaching of the following languages are discussed albanian arabic armenian eastern and western bengali brazilian portuguese chinese czech french hindi urdu japanese khmer korean pasifika languages persian russian spanish turkish vietnamese and yiddish these discussions contribute to the development and establishment of hl instructional paradigms through the experiences of actors on the ground as they respond to local conditions instantiate current research and pedagogical findings and seek solutions that are workable from an organizational standpoint the routledge handbook of heritage language education is an ideal resource for researchers and graduate students interested in heritage language education at home or abroad transcripts of more than seventy five oral history interviews in which the interviewees assess their mit experience and reflect on the role of blacks at mit and beyond this book grew out of the blacks at mit history project whose mission is to document the black presence at mit the main body of the text consists of transcripts of more

than seventy five oral history interviews in which the interviewees assess their mit experience and reflect on the role of blacks at mit and beyond although most of the interviewees are present or former students black faculty administrators and staff are also represented as are nonblack faculty and administrators who have had an impact on blacks at mit the interviewees were selected with an eye to presenting the broadest range of issues and personalities as well as a representative cross section by time period and category each interviewee was asked to discuss family background education role models and mentors experiences of racism and race related issues choice of field and career goals adjustment to the mit environment best and worst mit experiences experience with mit support services relationships with mit students faculty and staff advice to present or potential mit students and advice to the mit administration a recurrent theme is that mit s rigorous teaching instills the confidence to deal with just about any hurdle in professional life and that an mit degree opens many doors and supplies instant credibility each interview includes biographical notes and pictures the book also includes a general introduction a glossary and appendixes describing the project s methodology the book gives a comprehensive overview of all available types of ecological models it is the first book of its kind that gives an overview of different model types and will be of interest to all those involved in ecological and environmental modelling and ecological informatics an introduction and overview of system modeling in biology that is accessible to researchers from different fields including biology computer science mathematics statistics physics and biochemistry research in systems biology requires the collaboration of researchers from diverse backgrounds

including biology computer science mathematics statistics physics and biochemistry these collaborations necessary because of the enormous breadth of background needed for research in this field can be hindered by differing understandings of the limitations and applicability of techniques and concerns from different disciplines this comprehensive introduction and overview of system modeling in biology makes the relevant background material from all pertinent fields accessible to researchers with different backgrounds the emerging area of systems level modeling in cellular biology has lacked a critical and thorough overview this book fills that gap it is the first to provide the necessary critical comparison of concepts and approaches with an emphasis on their possible applications it presents key concepts and their theoretical background including the concepts of robustness and modularity and their exploitation to study biological systems the best known modeling approaches and their advantages and disadvantages lessons from the application of mathematical models to the study of cellular biology and available modeling tools and datasets along with their computational limitations an introduction to a broad range of topics in deep learning covering mathematical and conceptual background deep learning techniques used in industry and research perspectives written by three experts in the field deep learning is the only comprehensive book on the subject elon musk cochair of openai cofounder and ceo of tesla and spacex deep learning is a form of machine learning that enables computers to learn from experience and understand the world in terms of a hierarchy of concepts because the computer gathers knowledge from experience there is no need for a human computer operator to formally specify all the knowledge that the computer needs the

hierarchy of concepts allows the computer to learn complicated concepts by building them out of simpler ones a graph of these hierarchies would be many layers deep this book introduces a broad range of topics in deep learning the text offers mathematical and conceptual background covering relevant concepts in linear algebra probability theory and information theory numerical computation and machine learning it describes deep learning techniques used by practitioners in industry including deep feedforward networks regularization optimization algorithms convolutional networks sequence modeling and practical methodology and it surveys such applications as natural language processing speech recognition computer vision online recommendation systems bioinformatics and videogames finally the book offers research perspectives covering such theoretical topics as linear factor models autoencoders representation learning structured probabilistic models monte carlo methods the partition function approximate inference and deep generative models deep learning can be used by undergraduate or graduate students planning careers in either industry or research and by software engineers who want to begin using deep learning in their products or platforms a website offers supplementary material for both readers and instructors this review volume presents both basic and applied aspects of diluted magnetic semiconductors dms the term dms applies generally to semiconductors in which a fraction of its constituent ions are replaced by magnetic ions this book is only the second to review dms materials it presents a detailed treatment of the current state of knowledge of the established properties of dms in the form of single crystals quantum wells and superlattices it also brings together recent work on new

dms materials and presents discussions on a wide range of possible dms applications contents magnetic properties of co based diluted magnetic semiconductors a i schindler et al diluted magnetic iv vi compounds g bauer h pascher photoemission spectroscopy and the electronic structure of diluted magnetic semiconductors a fujimori the luminescence of wide band gap ii mn vi semimagnetic semiconductors c benecke h e gumlich light scattering in diluted magnetic semiconductors e anastassakis optical properties of zn mn and cd mn chalcogenide quantum wells and superlattices w heimbrodt o goede electroluminescent devices using zns mn for the phospher layer a abe and other papers readership chemists physicists materials scientists and electronic engineers keywords magnetic superconductors photoemission spectroscopy electroluminescent devices a valuable overview of the most important ideas and results in statistical modeling written by a highly experienced author foundations of linear and generalized linear models is a clear and comprehensive guide to the key concepts and results of linearstatistical models the book presents a broad in depth overview of the most commonly usedstatistical models by discussing the theory underlying the models r software applications and examples with crafted models to elucidate key ideas and promote practical modelbuilding the book begins by illustrating the fundamentals of linear models such as how the model fitting projects the data onto a model vector subspace and how orthogonal decompositions of the data yield information about the effects of explanatory variables subsequently the book covers the most popular generalized linear models which include binomial and multinomial logistic regression for categorical data and poisson and negative binomial loglinear models for count data

focusing on the theoretical underpinnings of these models foundations oflinear and generalized linear models also features an introduction to quasi likelihood methods that require weaker distributional assumptions such as generalized estimating equation methods an overview of linear mixed models and generalized linear mixed models with random effects for clustered correlated data bayesian modeling and extensions to handle problematic cases such as high dimensional problems numerous examples that use r software for all text data analyses more than 400 exercises for readers to practice and extend the theory methods and data analysis a supplementary website with datasets for the examples and exercises an invaluable textbook for upper undergraduate and graduate level students in statistics and biostatistics courses foundations of linear and generalized linear models is also an excellent reference for practicing statisticians and biostatisticians as well as anyone who is interested in learning about the most important statistical models for analyzing data this two volume set contains the proceedings of the july 2001 conference on computer vision the 205 papers discuss sensors and early vision stereo and multiple views segmentation and matching learning in vision shape representation and recovery stereo and multiple views segmentation and matching object recognition tracking video analysis reflectance image databases vision systems and texture and demo overviews there is no subject index the included cd rom contains a full version of the proceedings c book news inc most data from satellites are in image form thus most books in the remote sensing field deal exclusively with image processing however signal processing can contribute significantly in extracting information from the remotely

sensed waveforms or time series data pioneering the combination of the two processes signal and image processing for re in science business and policymaking anywhere data are used in prediction two sorts of problems requiring very different methods of analysis often arise the first problems of recognition and classification concerns learning how to use some features of a system to accurately predict other features of that system the second problems of causal discovery concerns learning how to predict those changes to some features of a system that will result if an intervention changes other features this book is about the second much more difficult type of problem typical problems of causal discovery are how will a change in commission rates affect the total sales of a company how will a reduction in cigarette smoking among older smokers affect their life expectancy how will a change in the formula a college uses to award scholarships affect its dropout rate these sorts of changes are interventions that directly alter some features of the system and perhaps and this is the question indirectly alter others the contributors discuss recent research and applications using bayes nets or directed graphic representations including representations of feedback or recursive systems the book contains a thorough discussion of foundational issues algorithms proof techniques and applications to economics physics biology educational research and other areas the system of environmental economic accounting 2012 applications and extensions seea applications and extensions provides potential compilers and users of seea based environmental economic accounts with material to show how this information can be used in decision making policy review and formulation analysis and research the seea applications and extensions provides a bridge between

compilers and analysts allowing each to recognise both the potential uses and the related measurement considerations it is a companion document to the seea central framework which was adopted as the initial international statistical standard for environmental economic accounting in 2012 a case study of the effectiveness of nongovernmental organizations in international and national arenas ralph b levering describes and analyzes the work of three u s based ngos known collectively as the neptune group he discusses the group s successful efforts during the third united nations conference on law of the sea unclos iii1973 1982 he details the group s effectiveness supporting negotiations in washington and addressing the news media and public opinipn one of the most important international conferences of modem times unclos iii thoroughly revised and updated the law of the sea by organizing seminars and conducting research on difficult issues facing the conference facilitating the flow of information among delegates and publishing a newspaper neptune the neptune group became the leading ngo at the conference engagingly written this history and memoir will interest students scholars officials environmentalists religious and world order activists and anyone interested in efforts to help create a more just and peaceful world order an overview of the emerging discipline of computational developmental psychology emphasizing the use of constructivist neural networks despite decades of scientific research the core issues of child development remain too complex to be explained by traditional verbal theories these issues include structure and transition representation and processing innate and experiential determinants of development stages of development the purpose and end of development and the relation between knowledge

and learning in this book thomas shultz shows how computational modeling can be used to capture these complex phenomena and in so doing he lays the foundation for a new subfield of developmental psychology computational developmental psychology a principal approach in developmental thinking is the constructivist one constructivism is the piagetian view that the child builds new cognitive structures by using current mental structures to understand new events in this book shultz features constructivist models employing networks that grow as well as learn this allows models to implement synaptogenesis and neurogenesis in a way that allows qualitative changes in processing mechanisms the book s appendices provide additional background on the mathematical concepts used and a companion site contains easy to use computational packages this book constitutes the thoroughly refereed joint post workshop proceedings of two co located events the second international workshop on classification of events activities and relationships clear 2007 and the 5th rich transcription 2007 meeting recognition evaluation rt 2007 held in succession in baltimore md usa in may 2007 the workshops had complementary evaluation efforts clear for the evaluation of human activities events and relationships in multiple multimodal data domains and rt for the evaluation of speech transcription related technologies from meeting room audio collections the 35 revised full papers presented from clear 2007 cover 3d person tracking 2d face detection and tracking person and vehicle tracking on surveillance data vehicle and person tracking aerial videos person identification head pose estimation and acoustic event detection the 15 revised full papers presented from rt 2007 are organized in topical sections on speech to text and

speaker diarization this book constitutes the refereed proceedings of the international conference on emerging trends in information and communication security etrics 2006 held in freiburg germany in june 2006 the book presents 36 revised full papers organized in topical sections on multilateral security security in service oriented computing secure mobile applications enterprise privacy privacy identity and anonymity security engineering security policies security protocols intrusion detection and cryptographic security from the streets of london to subway stations in new york city hundreds of thousands of surveillance cameras ubiquitously collect hundreds of thousands of videos often running 24 7 how can such vast volumes of video data be stored analyzed indexed and searched how can advanced video analysis and systems autonomously recognize people and detect targeted activities real time collating and presenting the latest information intelligent video surveillance systems and technology explores these issues from fundamentals principle to algorithmic design and system implementation an integrated discussion of key research and applications written and edited by a collection of industry experts the book presents state of the art technologies and systems in intelligent video surveillance the book integrates key research design and implementation themes of intelligent video surveillance systems and technology into one comprehensive reference the chapters cover the computational principles behind the technologies and systems and include system implementation issues as well as examples of successful applications of these technologies builds a foundation for future developments changing appearance caused by changing viewpoints illumination expression and movement self cross body

occlusion modeling of cluttered background capable of efficient background subtraction for object detection and spatial and temporal alignment of multiple cameras are just a few of the challenges that remain in further developing and refining intelligent video surveillance technology and systems fully illustrated with line art tables and photographs demonstrating the collected video and results obtained using the related algorithms including a color plate section the book provides a high level blueprint for advances and insights into future directions of the field understanding and applying complex modern financial models in real life scenarios including the black litterman model for constructing an optimal portfolio while incorporating personal views since the 1970s the cognitive sciences have offered multidisciplinary ways of understanding the mind and cognition the mit encyclopedia of the cognitive sciences mitecs is a landmark comprehensive reference work that represents the methodological and theoretical diversity of this changing field at the core of the encyclopedia are 471 concise entries from acquisition and adaptationism to wundt and x bar theory each article written by a leading researcher in the field provides an accessible introduction to an important concept in the cognitive sciences as well as references or further readings six extended essays which collectively serve as a roadmap to the articles provide overviews of each of six major areas of cognitive science philosophy psychology neurosciences computational intelligence linguistics and language and culture cognition and evolution for both students and researchers mitecs will be an indispensable guide to the current state of the cognitive sciences