

Access Free Concepts Ontologies And Knowledge Representation Springerbriefs In Computer Science Pdf Free Copy

The Madhesi Upsurge and the Contested Idea of Nepal Mar 18 2020 This book is set against the burning issue of ethnic uprisings in the Madhes region of Nepal and analyses debates on the idea of contemporary Nepal. The limited view of Nepal as a primarily hill nation with Nepali-speaking people ignores the vast ethnic and linguistic diversity of the country. It has particularly rendered stateless the Madhesi community which inhabits the plains bordering India and shares closer cultural affinity and marital ties across the border. Increasing demands for ethnic and territorial autonomy by the Madhesis suggest the need for redefining the idea of Nepal and establishing Madhesi identity as Nepali identity while at the same time addressing the deeply contested idea of regional versus social identity in the region. This book uses narratives from the Madhesi community including from prominent Madhesi analysts and activists, to define their identity as well as their aspirations in a

democratic Nepal. It also provides a perspective on the internal dynamics of caste and language of this region and their possible impact on consolidating ethnic identities in Nepal.

Persistence Theory: From Quiver Representations to Data Analysis Jan 08 2022 Persistence theory emerged in the early 2000s as a new theory in the area of applied and computational topology. This book provides a broad and modern view of the subject, including its algebraic, topological, and algorithmic aspects. It also elaborates on applications in data analysis. The level of detail of the exposition has been set so as to keep a survey style, while providing sufficient insights into the proofs so the reader can understand the mechanisms at work. The book is organized into three parts. The first part is dedicated to the foundations of persistence and emphasizes its connection to quiver representation theory. The second part focuses on its connection to applications through a few selected topics. The third part provides perspectives for both the theory and its applications. The book can be used as a text for a course on applied topology or data analysis.

Modelling Nature: An Opinionated Introduction to Scientific Representation Mar 10 2022 This monograph offers a critical introduction to current

theories of how scientific models represent their target systems. Representation is important because it allows scientists to study a model to discover features of reality. The authors provide a map of the conceptual landscape surrounding the issue of scientific representation, arguing that it consists of multiple intertwined problems. They provide an encyclopaedic overview of existing attempts to answer these questions, and they assess their strengths and weaknesses. The book also presents a comprehensive statement of their alternative proposal, the DEKI account of representation, which they have developed over the last few years. They show how the account works in the case of material as well as non-material models; how it accommodates the use of mathematics in scientific modelling; and how it sheds light on the relation between representation in science and art. The issue of representation has generated a sizeable literature, which has been growing fast in particular over the last decade. This makes it hard for novices to get a handle on the topic because so far there is no book-length introduction that would guide them through the discussion. Likewise, researchers may require a comprehensive review that they can refer to for critical evaluations. This book meets the needs of both groups.

Data-Driven Wireless Networks Jun 01 2021 This SpringerBrief discusses the applications of sparse representation in wireless communications, with a particular focus on the most recent developed compressive sensing (CS) enabled approaches. With the help of sparsity property, sub-Nyquist sampling can be achieved in wideband cognitive radio networks by adopting compressive sensing, which is illustrated in this brief, and it starts with a comprehensive overview of compressive sensing principles. Subsequently, the authors present a complete framework for data-driven compressive spectrum sensing in cognitive radio networks, which guarantees robustness, low-complexity, and security. Particularly, robust compressive spectrum sensing, low-complexity compressive spectrum sensing, and secure compressive sensing based malicious user detection are proposed to address the various issues in wideband cognitive radio networks. Correspondingly, the real-world signals and data collected by experiments carried out during TV white space pilot trial enables data-driven compressive spectrum sensing. The collected data are analysed and used to verify our designs and provide significant insights on the potential of applying compressive sensing to wideband spectrum sensing. This SpringerBrief provides

readers a clear picture on how to exploit the compressive sensing to process wireless signals in wideband cognitive radio networks. Students, professors, researchers, scientists, practitioners, and engineers working in the fields of compressive sensing in wireless communications will find this SpringerBrief very useful as a short reference or study guide book. Industry managers, and government research agency employees also working in the fields of compressive sensing in wireless communications will find this SpringerBrief useful as well.

Multiplex Networks Apr 18 2020 This book provides the basis of a formal language and explores its possibilities in the characterization of multiplex networks. Armed with the formalism developed, the authors define structural metrics for multiplex networks. A methodology to generalize monoplex structural metrics to multiplex networks is also presented so that the reader will be able to generalize other metrics of interest in a systematic way. Therefore, this book will serve as a guide for the theoretical development of new multiplex metrics. Furthermore, this Brief describes the spectral properties of these networks in relation to concepts from algebraic graph theory and the theory of matrix polynomials. The text is rounded off by

analyzing the different structural transitions present in multiplex systems as well as by a brief overview of some representative dynamical processes.

Multiplex Networks will appeal to students, researchers, and professionals within the fields of network science, graph theory, and data science.

Concepts, Ontologies, and Knowledge Representation Dec 19 2022 Recording knowledge in a common framework that would make it possible to seamlessly share global knowledge remains an important challenge for researchers. This brief examines several ideas about the representation of knowledge addressing this challenge. A widespread general agreement is followed that states uniform knowledge representation should be achievable by using ontologies populated with concepts. A separate chapter is dedicated to each of the three introduced topics, following a uniform outline: definition, organization, and use. This brief is intended for those who want to get to know the field of knowledge representation quickly, or would like to be up to date with current developments in the field. It is also useful for those dealing with implementation as examples of numerous operational systems are also given.

Gender Equality in Politics Jul 02 2021 This book provides a timely and unique contribution to current

debates on how effectively voluntary party quotas address the persistent underrepresentation of women in legislatures. Using a most similar case design and a mixed-methods approach, the authors draw attention to the ways in which electoral systems and party regulations interface with voluntary party quotas in Germany and Austria. All quota parties in these countries support the goal of equal participation of women and men in elected office, and quotas are presented as a means to precisely that end. In order to assess parties' commitment to their declared goals, and the effectiveness of quotas, the book introduces the concept of the post-quota gender gap and defines it as the difference between a party's adopted quota and the actual share of women in legislative bodies at the national and regional level. Complementing the existing literature on recruitment and socio-cultural legacies, the authors argue that the problem of voluntary party quotas lies at the intersection of party quota design and electoral law. Either parties need to design quotas that actually work within a given electoral system, or we need legislative action geared toward advancing parity not just in candidate selection, but in the composition of legislatures. The book draws on gendered candidate and election data, on the party statutes of federal and state-level

party organizations, and on interviews with party officials and party women's organizations.

The Philosophy of Geo-Ontologies Jun 20 2020

Placed at the intersection among philosophy, geography, and computer science, the domain of investigation of applied ontology of geography ranges from making explicit assumptions and commitments of geography as a discipline, to the theoretical and technical needs of geographical/IT tools, such as GIS and geo-ontologies. Such a domain of investigation represents the central topic of discussion of this book, which intends: 1) to provide an overview of the mutual interactions among the disciplines encompassed in the domain; 2) to discuss notions such as spatial representation, boundaries, and geographical entities that constitute the main focus of the (philosophical) ontology of geography; 3) to propose a geographical classification of geo-ontologies in response to their increasing diffusion within the contemporary debate, as well as to show what ontological categories best systematize their contents. The second edition of the book differs from the first one as it offers a broader analysis of the (philosophical) ontology of geography: an analysis that is no more limited to the theoretical need of geo-ontologies.

Deep Neural Networks in a Mathematical Framework

Oct 25 2020 This SpringerBrief describes how to build a rigorous end-to-end mathematical framework for deep neural networks. The authors provide tools to represent and describe neural networks, casting previous results in the field in a more natural light. In particular, the authors derive gradient descent algorithms in a unified way for several neural network structures, including multilayer perceptrons, convolutional neural networks, deep autoencoders and recurrent neural networks. Furthermore, the authors developed framework is both more concise and mathematically intuitive than previous representations of neural networks. This SpringerBrief is one step towards unlocking the black box of Deep Learning. The authors believe that this framework will help catalyze further discoveries regarding the mathematical properties of neural networks. This SpringerBrief is accessible not only to researchers, professionals and students working and studying in the field of deep learning, but also to those outside of the neural network community.

Machine Learning in Social Networks Aug 23 2020 This book deals with network representation learning. It deals with embedding nodes, edges, subgraphs and graphs. There is a growing interest in understanding complex systems in different domains including health, education, agriculture and

transportation. Such complex systems are analyzed by modeling, using networks that are aptly called complex networks. Networks are becoming ubiquitous as they can represent many real-world relational data, for instance, information networks, molecular structures, telecommunication networks and protein-protein interaction networks. Analysis of these networks provides advantages in many fields such as recommendation (recommending friends in a social network), biological field (deducing connections between proteins for treating new diseases) and community detection (grouping users of a social network according to their interests) by leveraging the latent information of networks. An active and important area of current interest is to come out with algorithms that learn features by embedding nodes or (sub)graphs into a vector space. These tasks come under the broad umbrella of representation learning. A representation learning model learns a mapping function that transforms the graphs' structure information to a low-/high-dimension vector space maintaining all the relevant properties.

Where is the Gödel-point hiding: Gentzen's Consistency Proof of 1936 and His Representation of Constructive Ordinals Oct 05 2021 This book explains the first published consistency proof of PA.

It contains the original Gentzen's proof, but it uses modern terminology and examples to illustrate the essential notions. The author comments on Gentzen's steps which are supplemented with exact calculations and parts of formal derivations. A notable aspect of the proof is the representation of ordinal numbers that was developed by Gentzen. This representation is analysed and connection to set-theoretical representation is found, namely an algorithm for translating Gentzen's notation into Cantor normal form. The topic should interest researchers and students who work on proof theory, history of proof theory or Hilbert's program and who do not mind reading mathematical texts.?

Inequalities Based on Sobolev Representations Apr 30 2021

Elliptic Quantum Groups Sep 04 2021 This is the first book on elliptic quantum groups, i.e., quantum groups associated to elliptic solutions of the Yang-Baxter equation. Based on research by the author and his collaborators, the book presents a comprehensive survey on the subject including a brief history of formulations and applications, a detailed formulation of the elliptic quantum group in the Drinfeld realization, explicit construction of both finite and infinite-dimensional representations, and a construction of the vertex operators as intertwining

operators of these representations. The vertex operators are important objects in representation theory of quantum groups. In this book, they are used to derive the elliptic q -KZ equations and their elliptic hypergeometric integral solutions. In particular, the so-called elliptic weight functions appear in such solutions. The author's recent study showed that these elliptic weight functions are identified with Okounkov's elliptic stable envelopes for certain equivariant elliptic cohomology and play an important role to construct geometric representations of elliptic quantum groups. Okounkov's geometric approach to quantum integrable systems is a rapidly growing topic in mathematical physics related to the Bethe ansatz, the Alday-Gaiotto-Tachikawa correspondence between 4D SUSY gauge theories and the CFT's, and the Nekrasov-Shatashvili correspondences between quantum integrable systems and quantum cohomology. To invite the reader to such topics is one of the aims of this book.

Reflection Positivity Dec 27 2020 Reflection Positivity is a central theme at the crossroads of Lie group representations, euclidean and abstract harmonic analysis, constructive quantum field theory, and stochastic processes. This book provides the first presentation of the representation

theoretic aspects of Reflection Positivity and discusses its connections to those different fields on a level suitable for doctoral students and researchers in related fields. It starts with a general introduction to the ideas and methods involving reflection positive Hilbert spaces and the Osterwalder--Schrader transform. It then turns to Reflection Positivity in Lie group representations. Already the case of one-dimensional groups is extremely rich. For the real line it connects naturally with Lax--Phillips scattering theory and for the circle group it provides a new perspective on the Kubo--Martin--Schwinger (KMS) condition for states of operator algebras. For Lie groups Reflection Positivity connects unitary representations of a symmetric Lie group with unitary representations of its Cartan dual Lie group. A typical example is the duality between the Euclidean group $E(n)$ and the Poincare group $P(n)$ of special relativity. It discusses in particular the curved context of the duality between spheres and hyperbolic spaces. Further it presents some new integration techniques for representations of Lie algebras by unbounded operators which are needed for the passage to the dual group. Positive definite functions, kernels and distributions are used throughout as a central tool.

Acoustic Modeling for Emotion Recognition Aug 03

2021 This book presents state of art research in speech emotion recognition. Readers are first presented with basic research and applications – gradually more advance information is provided, giving readers comprehensive guidance for classify emotions through speech. Simulated databases are used and results extensively compared, with the features and the algorithms implemented using MATLAB. Various emotion recognition models like Linear Discriminant Analysis (LDA), Regularized Discriminant Analysis (RDA), Support Vector Machines (SVM) and K-Nearest neighbor (KNN) and are explored in detail using prosody and spectral features, and feature fusion techniques.

Visual Indexing and Retrieval May 20 2020 The research in content-based indexing and retrieval of visual information such as images and video has become one of the most populated directions in the vast area of information technologies. Social networks such as YouTube, Facebook, FileMobile, and DailyMotion host and supply facilities for accessing a tremendous amount of professional and user generated data. The areas of societal activity, such as, video protection and security, also generate thousands and thousands of terabytes of visual content. This book presents the most recent results and important trends in visual information

indexing and retrieval. It is intended for young researchers, as well as, professionals looking for an algorithmic solution to a problem.

Inequalities Based on Sobolev Representations Jan 20 2023
Inequalities based on Sobolev Representations deals exclusively with very general tight integral inequalities of Chebyshev-Grüss, Ostrowski types and of integral means, all of which depend upon the Sobolev integral representations of functions. Applications illustrate inequalities that engage in ordinary and weak partial derivatives of the involved functions. This book also derives important estimates for the averaged Taylor polynomials and remainders of Sobolev integral representations. The results are examined in all directions and through both univariate and multivariate cases. This book is suitable for researchers, graduate students, and seminars in subareas of mathematical analysis, inequalities, partial differential equations and information theory.

Context-Aware Collaborative Prediction Nov 25 2020
This book presents two collaborative prediction approaches based on contextual representation and hierarchical representation, and their applications including context-aware recommendation, latent collaborative retrieval and click-through rate prediction. The proposed techniques offer

significant improvements over current methods, the key determinants being the incorporated contextual representation and hierarchical representation. To provide a background to the core ideas presented, it offers an overview of contextual modeling and the theory of contextual representation and hierarchical representation, which are constructed for the joint interaction of entities and contextual information. The book offers a rich blend of theory and practice, making it a valuable resource for students, researchers and practitioners who need to construct systems of information retrieval, data mining and recommendation systems with contextual information.

Dynamic Network Representation Based on Latent Factorization of Tensors Jun 13 2022 A dynamic network is frequently encountered in various real industrial applications, such as the Internet of Things. It is composed of numerous nodes and large-scale dynamic real-time interactions among them, where each node indicates a specified entity, each directed link indicates a real-time interaction, and the strength of an interaction can be quantified as the weight of a link. As the involved nodes increase drastically, it becomes impossible to observe their full interactions at each time slot, making a resultant dynamic network High Dimensional and Incomplete

(HDI). An HDI dynamic network with directed and weighted links, despite its HDI nature, contains rich knowledge regarding involved nodes' various behavior patterns. Therefore, it is essential to study how to build efficient and effective representation learning models for acquiring useful knowledge. In this book, we first model a dynamic network into an HDI tensor and present the basic latent factorization of tensors (LFT) model. Then, we propose four representative LFT-based network representation methods. The first method integrates the short-time bias, long-time bias and preprocessing bias to precisely represent the volatility of network data. The second method utilizes a proportion-al-integral-derivative controller to construct an adjusted instance error to achieve a higher convergence rate. The third method considers the non-negativity of fluctuating network data by constraining latent features to be non-negative and incorporating the extended linear bias. The fourth method adopts an alternating direction method of multipliers framework to build a learning model for implementing representation to dynamic networks with high preciseness and efficiency.

Systematic Changes in Body Image Following Formation of Phantom Limbs Jan 16 2020 This book presents new findings on body image and also

introduces new neuroscience-based methods for the fields of neurology and neurorehabilitation. Even when the hand is stationary we know its position – information that is needed by the brain to plan movements. If the sensory input from a limb is removed as the result of an accident, or as part of an experiment with local anesthesia, then a ‘phantom’ limb commonly develops. We used ischemic anesthesia of one limb to study the mechanisms that define this phenomenon. Surprisingly, if the fingers, wrist, elbow, ankle, and knee are extended before and during an ischemic block, then the perceived limb is flexed at the joint and vice versa. Furthermore, the limb is perceived to move continuously with no default position. The key parameter for these illusory changes in limb position is the difference in discharge rates between afferents in the flexor and extensor muscles at a joint. The final position of the phantom limb depends on its initial position, suggesting that a body image uses incoming proprioceptive information for determination of starting points and endpoints when generating movements. In addition, the change in position does not involve limb postures that are anatomically impossible, suggesting that illusory posture is constrained by body maps. These results provide new information about how the brain

generates phantom limbs.

Robust Recognition via Information Theoretic Learning Mar 30 2021 This Springer Brief represents a comprehensive review of information theoretic methods for robust recognition. A variety of information theoretic methods have been proffered in the past decade, in a large variety of computer vision applications; this work brings them together, attempts to impart the theory, optimization and usage of information entropy. The authors resort to a new information theoretic concept, correntropy, as a robust measure and apply it to solve robust face recognition and object recognition problems. For computational efficiency, the brief introduces the additive and multiplicative forms of half-quadratic optimization to efficiently minimize entropy problems and a two-stage sparse presentation framework for large scale recognition problems. It also describes the strengths and deficiencies of different robust measures in solving robust recognition problems.

From Collective Beings to Quasi-Systems Dec 07 2021 This book outlines a possible future theoretical perspective for systemics, its conceptual morphology and landscape while the Good-Old-Fashioned-Systemics (GOFs) era is still under way. The change from GOFs to future systemics can be

represented, as shown in the book title, by the conceptual change from Collective Beings to Quasi-systems. With the current advancements, problems and approaches occurring in contemporary science, systemics are moving beyond the traditional frameworks used in the past. From Collective Beings to Coherent Quasi-Systems outlines a conceptual morphology and landscape for a new theoretical perspective for systemics introducing the concept of Quasi-systems. Advances in domains such as theoretical physics, philosophy of science, cell biology, neuroscience, experimental economics, network science and many others offer new concepts and technical tools to support the creation of a fully transdisciplinary General Theory of Change. This circumstance requires a deep reformulation of systemics, without forgetting the achievements of established conventions. The book is divided into two parts. Part I, examines classic systemic issues from new theoretical perspectives and approaches. A new general unified framework is introduced to help deal with topics such as dynamic structural coherence and Quasi-systems. This new theoretical framework is compared and contrasted with the traditional approaches. Part II focuses on the process of translation into social culture of the theoretical principles, models and approaches

introduced in Part I. This translation is urgent in post-industrial societies where emergent processes and problems are still dealt with by using the classical or non-systemic knowledge of the industrial phase.

Centrality and Diversity in Search Nov 06 2021 The concepts of centrality and diversity are highly important in search algorithms, and play central roles in applications of artificial intelligence (AI), machine learning (ML), social networks, and pattern recognition. This work examines the significance of centrality and diversity in representation, regression, ranking, clustering, optimization, and classification. The text is designed to be accessible to a broad readership. Requiring only a basic background in undergraduate-level mathematics, the work is suitable for senior undergraduate and graduate students, as well as researchers working in machine learning, data mining, social networks, and pattern recognition.

Mixed-Integer Representations in Control Design Jul 14 2022 In this book, the authors propose efficient characterizations of the non-convex regions that appear in many control problems, such as those involving collision/obstacle avoidance and, in a broader sense, in the description of feasible sets for optimization-based control design involving contradictory objectives. The text deals with a large

class of systems that require the solution of appropriate optimization problems over a feasible region, which is neither convex nor compact. The proposed approach uses the combinatorial notion of hyperplane arrangement, partitioning the space by a finite collection of hyperplanes, to describe non-convex regions efficiently. Mixed-integer programming techniques are then applied to propose acceptable formulations of the overall problem. Multiple constructions may arise from the same initial problem, and their complexity under various parameters - space dimension, number of binary variables, etc. - is also discussed. This book is a useful tool for academic researchers and graduate students interested in non-convex systems working in control engineering area, mobile robotics and/or optimal planning and decision-making.

Introduction to the Analytic Hierarchy Process
Dec 15 2019
The Analytic Hierarchy Process (AHP) has been one of the foremost mathematical methods for decision making with multiple criteria and has been widely studied in the operations research literature as well as applied to solve countless real-world problems. This book is meant to introduce and strengthen the readers' knowledge of the AHP, no matter how familiar they may be with the topic. This book provides a concise, yet self-contained,

introduction to the AHP that uses a novel and more pedagogical approach. It begins with an introduction to the principles of the AHP, covering the critical points of the method, as well as some of its applications. Next, the book explores further aspects of the method, including the derivation of the priority vector, the estimation of inconsistency, and the use of AHP for group decisions. Each of these is introduced by relaxing initial assumptions. Furthermore, this booklet covers extensions of AHP, which are typically neglected in elementary expositions of the methods. Such extensions concern different numerical representations of preferences and the interval and fuzzy representations of preferences to account for uncertainty. During the whole exposition, an eye is kept on the most recent developments of the method.

Assessment of Total Evacuation Systems for Tall Buildings Feb 15 2020 This SpringerBrief focuses on the use of egress models to assess the optimal strategy for total evacuation in high-rise buildings. It investigates occupant relocation and evacuation strategies involving the exit stairs, elevators, sky bridges and combinations thereof. Chapters review existing information on this topic and describe case study simulations of a multi-component exit

strategy. This review provides the architectural design, regulatory and research communities with a thorough understanding of the current and emerging evacuation procedures and possible future options. A model case study simulates seven possible strategies for the total evacuation of two identical twin towers linked with two sky-bridges at different heights. The authors present the layout of the building and the available egress components including both vertical and horizontal egress components, namely stairs, occupant evacuation elevators (OEEs), service elevators, transfer floors and sky-bridges. The evacuation strategies employ a continuous spatial representation evacuation model (Pathfinder) and are cross-validated by a fine network model (STEPS). Assessment of Total Evacuation Systems for Tall Buildings is intended for practitioners as a tool for analyzing evacuation methods and efficient exit strategies. Researchers working in architecture and fire safety will also find the book valuable.

Sparse Representations and Compressive Sensing for Imaging and Vision Feb 21 2023 Compressed sensing or compressive sensing is a new concept in signal processing where one measures a small number of non-adaptive linear combinations of the signal. These measurements are usually much

smaller than the number of samples that define the signal. From these small numbers of measurements, the signal is then reconstructed by non-linear procedure. Compressed sensing has recently emerged as a powerful tool for efficiently processing data in non-traditional ways. In this book, we highlight some of the key mathematical insights underlying sparse representation and compressed sensing and illustrate the role of these theories in classical vision, imaging and biometrics problems.

Representation in Machine Learning Feb 09 2022

This book provides a concise but comprehensive guide to representation, which forms the core of Machine Learning (ML). State-of-the-art practical applications involve a number of challenges for the analysis of high-dimensional data. Unfortunately, many popular ML algorithms fail to perform, in both theory and practice, when they are confronted with the huge size of the underlying data. Solutions to this problem are aptly covered in the book. In addition, the book covers a wide range of representation techniques that are important for academics and ML practitioners alike, such as Locality Sensitive Hashing (LSH), Distance Metrics and Fractional Norms, Principal Components (PCs), Random Projections and Autoencoders. Several experimental results are provided in the book to

demonstrate the discussed techniques' effectiveness.

The Philosophy of Science and Engineering Design
Jan 28 2021 This book discusses the relationship between the philosophy of science and philosophy of engineering, and demonstrates how philosophers of engineering design as well as design researchers can benefit from the conceptual toolkit that the philosophy of science has to offer. In this regard, it employs conceptual tools from the philosophical literature on scientific explanation to address key issues in engineering design and philosophy of engineering design. Specifically, the book focuses on assessing the explanatory value of function ascriptions used in engineering design and philosophy of technical functions; on elaborating the structure of explanation in engineering design; on assessing the role and value of design representations in engineering design and philosophy thereof; and on elaborating means for the testing of design methods. Presenting a novel and effective approach to tackling key issues in the field, philosophers of engineering and design alike will greatly benefit from this book.

Feature Coding for Image Representation and Recognition
Oct 17 2022 This brief presents a comprehensive introduction to feature coding, which

serves as a key module for the typical object recognition pipeline. The text offers a rich blend of theory and practice while reflects the recent developments on feature coding, covering the following five aspects: (1) Review the state-of-the-art, analyzing the motivations and mathematical representations of various feature coding methods; (2) Explore how various feature coding algorithms evolve along years; (3) Summarize the main characteristics of typical feature coding algorithms and categorize them accordingly; (4) Discuss the applications of feature coding in different visual tasks, analyze the influence of some key factors in feature coding with intensive experimental studies; (5) Provide the suggestions of how to apply different feature coding methods and forecast the potential directions for future work on the topic. It is suitable for students, researchers, practitioners interested in object recognition.

The Development of Elementary Quantum Theory
Feb 26 2021 This book traces the evolution of the ideas that eventually resulted in the elementary quantum theory in 1925/26. Further, it discusses the essential differences between the fundamental equations of Quantum Theory derived by Born and Jordan, logically comprising Quantum Mechanics and Quantum Optics, and the traditional view of the

development of Quantum Mechanics. Drawing on original publications and letters written by the main protagonists of that time, it shows that Einstein's contributions from 1905 to 1924 laid the essential foundations for the development of Quantum Theory. Einstein introduced quantization of the radiation field; Born added quantized mechanical behavior. In addition, Born recognized that Quantum Mechanics necessarily required Quantum Optics; his radical concept of truly discontinuous and statistical quantum transitions ("quantum leaps") was directly based on Einstein's physical concepts.

Random Fields of Piezoelectricity and Piezomagnetism Nov 13 2019 Random fields are a necessity when formulating stochastic continuum theories. In this book, a theory of random piezoelectric and piezomagnetic materials is developed. First, elements of the continuum mechanics of electromagnetic solids are presented. Then the relevant linear governing equations are introduced, written in terms of either a displacement approach or a stress approach, along with linear variational principles. On this basis, a statistical description of second-order (statistically) homogeneous and isotropic rank-3 tensor-valued random fields is given. With a group-theoretic foundation, correlation functions and their spectral

counterparts are obtained in terms of stochastic integrals with respect to certain random measures for the fields that belong to orthotropic, tetragonal, and cubic crystal systems. The target audience will primarily comprise researchers and graduate students in theoretical mechanics, statistical physics, and probability.

The Mixed Member Proportional System: Providing Greater Representation for Women? Nov 18 2022
This Brief discusses the adoption of the mixed member proportional (MMP) electoral system in New Zealand and its subsequent effect on representation for women. Concerns about the homogeneity of the legislature under the Single Member Plurality electoral system and the need for increased representativeness and greater proportionality of party preference lead to the changeover in 1996. The book addresses the question of whether an increase in descriptive representation for women in New Zealand's House of Representatives has translated to policy outcomes that are beneficial to them. It also examines the extent to which female MPs meet the expectation that they will act for members of their groups; pushing minority and gender-friendly legislation and policies into the political arena. Finally, it raises questions about where women are found in New Zealand's decision making bodies and

what influence they might have on policy outcomes. The first book to examine the effects of the MMP system on female descriptive and substantive representation using a case study analysis, this Brief adds to the literature on electoral systems and women's political representation. This book will be of use to political science students at both the undergraduate and graduate level, particularly those interested in electoral studies, political institutions, politics and gender, and minority representation.

Compact Representations for the Design of Quantum Logic Apr 11 2022 This book discusses modern approaches and challenges of computer-aided design (CAD) of quantum circuits with a view to providing compact representations of quantum functionality. Focusing on the issue of quantum functionality, it presents Quantum Multiple-Valued Decision Diagrams (QMDDs – a means of compactly and efficiently representing and manipulating quantum logic. For future quantum computers, going well beyond the size of present-day prototypes, the manual design of quantum circuits that realize a given (quantum) functionality on these devices is no longer an option. In order to keep up with the technological advances, methods need to be provided which, similar to the design and synthesis of conventional circuits, automatically

generate a circuit description of the desired functionality. To this end, an efficient representation of the desired quantum functionality is of the essence. While straightforward representations are restricted due to their (exponentially) large matrix descriptions and other decision diagram-like structures for quantum logic suffer from not comprehensively supporting typical characteristics, QMDDs employ a decomposition scheme that more naturally models quantum systems. As a result, QMDDs explicitly support quantum-mechanical effects like phase shifts and are able to take more advantage of corresponding redundancies, thereby allowing a very compact representation of relevant quantum functionality composed of dozens of qubits. This provides the basis for the development of sophisticated design methods as shown for quantum circuit synthesis and verification.

Concise Computer Mathematics Oct 13 2019
Adapted from a modular undergraduate course on computational mathematics, Concise Computer Mathematics delivers an easily accessible, self-contained introduction to the basic notions of mathematics necessary for a computer science degree. The text reflects the need to quickly introduce students from a variety of educational backgrounds to a number of essential mathematical

concepts. The material is divided into four units: discrete mathematics (sets, relations, functions), logic (Boolean types, truth tables, proofs), linear algebra (vectors, matrices and graphics), and special topics (graph theory, number theory, basic elements of calculus). The chapters contain a brief theoretical presentation of the topic, followed by a selection of problems (which are direct applications of the theory) and additional supplementary problems (which may require a bit more work). Each chapter ends with answers or worked solutions for all of the problems.

Properties of Closed 3-Braids and Braid
Representations of Links Aug 15 2022 This book studies diverse aspects of braid representations via knots and links. Complete classification results are illustrated for several properties through Xu's normal 3-braid form and the Hecke algebra representation theory of link polynomials developed by Jones. Topological link types are identified within closures of 3-braids which have a given Alexander or Jones polynomial. Further classifications of knots and links arising by the closure of 3-braids are given, and new results about 4-braids are part of the work. Written with knot theorists, topologists, and graduate students in mind, this book features the identification and analysis of effective techniques

for diagrammatic examples with unexpected properties.

Motion History Images for Action Recognition and Understanding Jul 22 2020 Human action analysis and recognition is a relatively mature field, yet one which is often not well understood by students and researchers. The large number of possible variations in human motion and appearance, camera viewpoint, and environment, present considerable challenges. Some important and common problems remain unsolved by the computer vision community. However, many valuable approaches have been proposed over the past decade, including the motion history image (MHI) method. This method has received significant attention, as it offers greater robustness and performance than other techniques. This work presents a comprehensive review of these state-of-the-art approaches and their applications, with a particular focus on the MHI method and its variants.

Extraction and Representation of Prosody for Speaker, Speech and Language Recognition May 12 2022 Extraction and Representation of Prosodic Features for Speech Processing Applications deals with prosody from speech processing point of view with topics including: The significance of prosody for speech processing applications Why prosody

need to be incorporated in speech processing applications Different methods for extraction and representation of prosody for applications such as speech synthesis, speaker recognition, language recognition and speech recognition This book is for researchers and students at the graduate level.

Schubert Calculus and Its Applications in Combinatorics and Representation Theory Sep 23 2020 This book gathers research papers and surveys on the latest advances in Schubert Calculus, presented at the International Festival in Schubert Calculus, held in Guangzhou, China on November 6–10, 2017. With roots in enumerative geometry and Hilbert's 15th problem, modern Schubert Calculus studies classical and quantum intersection rings on spaces with symmetries, such as flag manifolds. The presence of symmetries leads to particularly rich structures, and it connects Schubert Calculus to many branches of mathematics, including algebraic geometry, combinatorics, representation theory, and theoretical physics. For instance, the study of the quantum cohomology ring of a Grassmann manifold combines all these areas in an organic way. The book is useful for researchers and graduate students interested in Schubert Calculus, and more generally in the study of flag manifolds in relation to

algebraic geometry, combinatorics, representation theory and mathematical physics.

Representation in Machine Learning Sep 16 2022
This book provides a concise but comprehensive guide to representation, which forms the core of Machine Learning (ML). State-of-the-art practical applications involve a number of challenges for the analysis of high-dimensional data. Unfortunately, many popular ML algorithms fail to perform, in both theory and practice, when they are confronted with the huge size of the underlying data. Solutions to this problem are aptly covered in the book. In addition, the book covers a wide range of representation techniques that are important for academics and ML practitioners alike, such as Locality Sensitive Hashing (LSH), Distance Metrics and Fractional Norms, Principal Components (PCs), Random Projections and Autoencoders. Several experimental results are provided in the book to demonstrate the discussed techniques' effectiveness.

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