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Who Built That Michelle Malkin 2015-05-19 The firebrand conservative columnist and best-selling author of In Defense of Internment shares lesser-known stories about inventors who have shaped American technological progress through the innovation of everyday objects, from bottle caps to bridge cables.
Introduction to Computer Science Using Python Charles Dierbach 2012-11-30 Introduction to Computer Science Using Python: A Computational Problem-Solving Focus,recommended by Guido van Rossum, the creator of Python (“This is not your average Python book…I think this book is a great text for anyone teaching CS1”). With a focus on computational problem solving from Chapter 1, this text provides numerous hands-on exercises and examples, each chapter ending with a significant-size program demonstrating the step-by-step process of program development, testing, and debugging. A final chapter includes the history of computing, starting with Charles Babbage, containing over 65 historical images. An end-of-book Python 3 Programmers’ Reference is also included for quick lookup of Python details. Extensive instructor materials are provided for those adopting for classroom use, including an instructors’ manual, over 1,000 well-developed slides covering all fundamental topics of each chapter, source code, and test bank.
Computational Vision and Medical Image Processing V Joao Tavares 2015-10-14 VipIMAGE 2015 contains invited lectures and full papers presented at VIPIMAGE 2015 - V ECCOMAS Thematic Conference on Computational Vision and Medical Image Processing (Tenerife, Canary Islands, Spain, 19-21 October, 2015). International contributions from 19 countries provide a comprehensive coverage of the current state-of-the-art in the fields o
Robotics Fernando Santos Osório 2016-09-29 This book constitutes the refereed proceedings of the 12th Latin American Robotics Symposium and Third Brazilian Symposium on Robotics, LARS 2015 / SBR 2015, held in Uberlândia, Brazil, in October/November 2015. The 17 revised full papers presented were carefully reviewed and selected from 80 submissions. The selected papers present a complete and solid reference of the state-of-the-art of intelligent robotics and automation research, covering the following areas: autonomous mobile robots, tele-operated and telepresence robots, human-robot interaction, trajectory control for mobile robots, autonomous vehicles, service-oriented robotic systems, semantic mapping, environment mapping, visual odometry, applications of RGB-D sensors, humanoid and biped robots, Robocup soccer robots, robot control, path planning, multiple vehicles and teams of robots. /div
Discovering Wavelets Edward Aboufadel 1999-10-05 An accessible and practical introduction to wavelets With applications in image processing, audio restoration, seismology, and elsewhere, wavelets have been the subject of growing excitement and interest over the past several years. Unfortunately, most books on wavelets are accessible primarily to research mathematicians. Discovering Wavelets presents basic and advanced concepts of wavelets in a way that is accessible to anyone with only a fundamental knowledge of linear algebra. The basic concepts of wavelet theory are introduced in the context of an explanation of how the FBI uses wavelets to compress fingerprint images. Wavelet theory is further developed in the setting of function spaces. The book then moves on to present more advanced topics such as filters, multiresolution analysis, Daubechies' wavelets, and further applications. The book concludes with a series of projects and problems that introduce advanced topics and offer starting points for research. Sample projects that demonstrate real wavelet applications include image compression, a wavelet-based search engine, processing with Daubechies' wavelets, and more. Among the special features of Discovering Wavelets are: * Real-life, hands-on examples that involve actual wavelet applications * A companion Web site containing Pixel Images software and Maple files to be used with the projects in the book * Challenging problems that reinforce and expand on the ideas being developed * An appendix containing the linear algebra needed to understand wavelets as presented in the book
SuperFractals Michael F. Barnsley 2006-09-07 SuperFractals, first published in 2006, describes mathematics and algorithms for the first time in book form, with breathtaking colour pictures.
Artificial Intelligence Research and Development E. Armengol 2015-10 Since it was formed in 1994, the Catalan Association for Artificial Intelligence (ACIA) has been promoting cooperation between researchers in artificial intelligence within the Catalan speaking community. The association now holds an annual conference in the Catalan region, which aims to foster discussion of the latest developments in artificial intelligence within the community of Catalan countries, as well as amongst members of the wider AI community. This book presents the proceedings of the 18th International Conference (CCIA 2015), held in Valencia, Spain, in October 2015. It contains full versions of the peer reviewed papers presented at the conference, as well as shorter poster contributions. In addition to this year’s dominant research trends of classification, decision support systems and data mining, many other topics are covered, ranging from theoretical aspects to descriptions of real applications. This overview of current work in the Catalan artificial intelligence community and of the collaboration between ACIA members and the AI community worldwide will be of interest to all those working in the field of artificial intelligence.
Symmetry in Vision Marco Bertamini 2018-07-09 This book is a printed edition of the Special Issue "Symmetry in Vision" that was published in Symmetry
Autonomous Horizons Greg Zacharias 2019-04-05 Dr. Greg Zacharias, former Chief Scientist of the United States Air Force (2015-18), explores next steps in autonomous systems (AS) development, fielding, and training. Rapid advances in AS development and artificial intelligence (AI) research will change how we think about machines, whether they are individual vehicle platforms or networked enterprises. The payoff will be considerable, affording the US military significant protection for aviators, greater effectiveness in employment, and unlimited opportunities for novel and disruptive concepts of operations. Autonomous Horizons: The Way Forward identifies issues and makes recommendations for the Air Force to take full advantage of this transformational technology.
The MPEG Handbook John Watkinson 2004 First Published in 2004. Routledge is an imprint of Taylor & Francis, an informa company.
Intelligence Science and Big Data Engineering. Image and Video Data Engineering Xiaofei He 2015-10-13 The two-volume set LNCS 9242 + 9243 constitutes the proceedings of the 5th International Conference on Intelligence Science and Big Data Engineering, ISciDE 2015, held in Suzhou, China, in June 2015. The total of 126 papers presented in the proceedings was carefully reviewed and selected from 416 submissions. They deal with big data, neural networks, image processing, computer vision, pattern recognition and graphics, object detection, dimensionality reduction and manifold learning, unsupervised learning and clustering, anomaly detection, semi-supervised learning.
Parallel Processing and Applied Mathematics Roman Wyrzykowski 2016-04-05 This two-volume-set (LNCS 9573 and 9574) constitutes the refereed proceedings of the 11th International Conference of Parallel Processing and Applied Mathematics, PPAM 2015, held in Krakow, Poland, in September 2015. The 111 revised full papers presented in both volumes were carefully reviewed and selected from 196 submissions. The focus of PPAM 2015 was on models, algorithms, and software toolswhich facilitate efficient and convenient utilization of modern parallel and distributed computing architectures, as well as on large-scale applications, including big data problems.
3D Computer Graphics Sam Buss 2003-05-19 Table of contents
Putting the "Why" Back into Bone "Archytecture" Phil Salmon 2017-07-27 A large literature exists on trabecular and cortical bone morphology. The engineering performance of bone, implied from its 3d architecture, is often the endpoint of bone biology experiments, being clinically relevant to bone fracture. How and why does bone travel along its complex spatio-temporal trajectory to acquire its architecture? The question "why" can have two meanings. The first, "teleological - why is an architecture advantageous?" – is the domain of substantial biomechanical research to date. The second, "etiological – how did an architecture come about?" – has received far less attention. This Frontiers Bone Research Topic invited contributions addressing this "etiological why" – what mechanisms can coordinate the activity of bone forming and resorbing cells to produce the observed complex and efficient bone architectures? One mechanism is proposed – chaotic nonlinear pattern formation (NPF) which underlies – in a unifying way – natural structures as disparate as trabecular bone, swarms of birds flying or shoaling fish, island formation, fluid turbulence and others. At the heart of NPF is the fact that simple rules operating between interacting elements multiplied and repeated many times, lead to complex and structured patterns. This paradigm of growth and form leads to a profound link between bone regulation and its architecture: in bone "the architecture is the regulation". The former is the emergent consequence of the latter. Whatever mechanism does determine bone's developing architecture has to operate at the level of individual sites of formation and resorption and coupling between the two. This has implications as to how we understand the effect on bone of agents such as gene products or drugs. It may be for instance that the "tuning" of coupling between formation and resorption might be as important as the achievement of enhanced bone volume. The ten articles that were contributed to this Topic were just what we hoped for – a snapshot of leading edge bone biology research which addresses the question of how bone gets its shape. We hope that you find these papers thought-provoking, and that they might stimulate new ideas in the research into bone architecture, growth and adaptation, and how to preserve healthy bone from gestation and childhood until old age.
Handbook of Visual Optics, Two-Volume Set Pablo Artal 2017-06-27 Handbook of Visual Optics offers an authoritative overview of encyclopedic knowledge in the field of physiological optics. It builds from fundamental concepts to the science and technology of instruments and practical procedures of vision correction, integrating expert knowledge from physics, medicine, biology, psychology, and engineering. The chapters comprehensively cover all aspects of modern study and practice, from optical principles and optics of the eye and retina to novel ophthalmic tools for imaging and visual testing, devices and techniques for visual correction, and the relationship between ocular optics and visual perception.
1001 Math Problems LearningExpress LLC 2013 1001 math problems will teach you how to: master core concepts to prepare for important exams, learn math rules and how to apply them to problems, learn math skills you can apply when solving problems at all levels, and overcome math anxiety through skills reinforcement and focused practice.
Identifying and Supporting Productive STEM Programs in Out-of-School Settings National Research Council 2015-10-26 More and more young people are learning about science, technology, engineering, and mathematics (STEM) in a wide variety of afterschool, summer, and informal programs. At the same time, there has been increasing awareness of the value of such programs in sparking, sustaining, and extending interest in and understanding of STEM. To help policy makers, funders and education leaders in both school and out-of-school settings make informed decisions about how to best leverage the educational and learning resources in their community, this report identifies features of productive STEM programs in out-of-school settings. Identifying and Supporting Productive STEM Programs in Out-of-School Settings draws from a wide range of research traditions to illustrate that interest in STEM and deep STEM learning develop across time and settings. The report provides guidance on how to evaluate and sustain programs. This report is a resource for local, state, and federal policy makers seeking to broaden access to multiple, high-quality STEM learning opportunities in their community.
Scale Space and Variational Methods in Computer Vision Jean-François Aujol 2015-04-27 This book constitutes the refereed proceedings of the 5th International Conference on Scale Space and Variational Methods in Computer Vision, SSVM 2015, held in Lège-Cap Ferret, France, in May 2015. The 56 revised full papers presented were carefully reviewed and selected from 83 submissions. The papers are organized in the following topical sections: scale space and partial differential equation methods; denoising, restoration and reconstruction, segmentation and partitioning; flow, motion and registration; photography, texture and color processing; shape, surface and 3D problems; and optimization theory and methods in imaging.
Handbook of Computer Animation John Vince 2003 Written by specialists in teaching computer animation, this text addresses key international topics of computer animation, such as: mathematics, modelling, rendering, and compositing. Each chapter discusses a particular topic and how it is applied, including state-of-the-art techniques that are used in computer animation. The handbook provides a complete and up-to-date picture of computer animation and will be a valuable reference source for programmers, technical directors and animators in computer animation, computer games and

special effects and also undergraduate and postgraduate students. The editor, John Vince, has written and edited over 20 books on computer graphics, computer animation and virtual reality.
3D Math Primer for Graphics and Game Development, 2nd Edition Fletcher Dunn 2011-11-02 This engaging book presents the essential mathematics needed to describe, simulate, and render a 3D world. Reflecting both academic and in-the-trenches practical experience, the authors teach you how to describe objects and their positions, orientations, and trajectories in 3D using mathematics. The text provides an introduction to mathematics for game designers, including the fundamentals of coordinate spaces, vectors, and matrices. It also covers orientation in three dimensions, calculus and dynamics, graphics, and parametric curves.
Artificial Intelligence For High Energy Physics Paolo Calafiura 2022-01-05 The Higgs boson discovery at the Large Hadron Collider in 2012 relied on boosted decision trees. Since then, high energy physics (HEP) has applied modern machine learning (ML) techniques to all stages of the data analysis pipeline, from raw data processing to statistical analysis. The unique requirements of HEP data analysis, the availability of high-quality simulators, the complexity of the data structures (which rarely are image-like), the control of uncertainties expected from scientific measurements, and the exabyte-scale datasets require the development of HEP-specific ML techniques. While these developments proceed at full speed along many paths, the nineteen reviews in this book offer a self-contained, pedagogical introduction to ML models' real-life applications in HEP, written by some of the foremost experts in their area.
Linear and Integer Optimization Gerard Sierksma 2015-05-01 Presenting a strong and clear relationship between theory and practice, Linear and Integer Optimization: Theory and Practice is divided into two main parts. The first covers the theory of linear and integer optimization, including both basic and advanced topics. Dantzig's simplex algorithm, duality, sensitivity analysis, integer optimization models
How to Free Your Inner Mathematician Susan D'Agostino 2020-03-26 How to Free Your Inner Mathematician delivers engaging mathematical content and provides reassurance that mathematical success has more to do with curiosity and drive than innate aptitude, offering readers more than 300 hand-drawn sketches alongside accessible descriptions of topics.
Optimal Transport for Applied Mathematicians Filippo Santambrogio 2015-10-17 This monograph presents a rigorous mathematical introduction to optimal transport as a variational problem, its use in modeling various phenomena, and its connections with partial differential equations. Its main goal is to provide the reader with the techniques necessary to understand the current research in optimal transport and the tools which are most useful for its applications. Full proofs are used to illustrate mathematical concepts and each chapter includes a section that discusses applications of optimal transport to various areas, such as economics, finance, potential games, image processing and fluid dynamics. Several topics are covered that have never been previously in books on this subject, such as the Knothe transport, the properties of functionals on measures, the Dacorogna-Moser flow, the formulation through minimal flows with prescribed divergence formulation, the case of the supremal cost, and the most classical numerical methods. Graduate students and researchers in both pure and applied mathematics interested in the problems and applications of optimal transport will find this to be an invaluable resource.
Conference Proceedings. The Future of Education Pixel 2015-07-01
The Book of R Tilman M. Davies 2016-07-16 The Book of R is a comprehensive, beginner-friendly guide to R, the world’s most popular programming language for statistical analysis. Even if you have no programming experience and little more than a grounding in the basics of mathematics, you’ll find everything you need to begin using R effectively for statistical analysis. You’ll start with the basics, like how to handle data and write simple programs, before moving on to more advanced topics, like producing statistical summaries of your data and performing statistical tests and modeling. You’ll even learn how to create impressive data visualizations with R’s basic graphics tools and contributed packages, like ggplot2 and ggvis, as well as interactive 3D visualizations using the rgl package. Dozens of hands-on exercises (with downloadable solutions) take you from theory to practice, as you learn: —The fundamentals of programming in R, including how to write data frames, create functions, and use variables, statements, and loops —Statistical concepts like exploratory data analysis, probabilities, hypothesis tests, and regression modeling, and how to execute them in R —How to access R’s thousands of functions, libraries, and data sets —How to draw valid and useful conclusions from your data —How to create publication-quality graphics of your results Combining detailed explanations with real-world examples and exercises, this book will provide you with a solid understanding of both statistics and the depth of R’s functionality. Make The Book of R your doorway into the growing world of data analysis.
Mathematics for Machine Learning Marc Peter Deisenroth 2020-04-23 The fundamental mathematical tools needed to understand machine learning include linear algebra, analytic geometry, matrix decompositions, vector calculus, optimization, probability and statistics. These topics are traditionally taught in disparate courses, making it hard for data science or computer science students, or professionals, to efficiently learn the mathematics. This self-contained textbook bridges the gap between mathematical and machine learning texts, introducing the mathematical concepts with a minimum of prerequisites. It uses these concepts to derive four central machine learning methods: linear regression, principal component analysis, Gaussian mixture models and support vector machines. For students and others with a mathematical background, these derivations provide a starting point to machine learning texts. For those learning the mathematics for the first time, the methods help build intuition and practical experience with applying mathematical concepts. Every chapter includes worked examples and exercises to test understanding. Programming tutorials are offered on the book's web site.
Mathematical Morphology and Its Applications to Signal and Image Processing Jón Atli Benediktsson 2015-05-15 This book contains the thoroughly refereed proceedings of the 12th International Symposium on Mathematical Morphology, ISMM 2015 held in Reykjavik, Iceland, in May 2015. The 62 revised full papers were carefully reviewed and selected from 72 submissions. The papers are organized in topical sections on evaluations and applications; hierarchies; color, multivalued and orientation fields; optimization, differential calculus and probabilities; topology and discrete geometry; and algorithms and implementation.
Ryan's Retina E-Book SriniVas R. Sadda 2022-04-13 Through six outstanding and award-winning editions, Ryan’s Retina has offered unsurpassed coverage of this complex subspecialty—everything from basic science through the latest research, therapeutics, technology, and surgical techniques. The fully revised 7th Edition, edited by Drs. SriniVas R. Sadda, Andrew P. Schachat, Charles P. Wilkinson, David R. Hinton, Peter Wiedemann, K. Bailey Freund, and David Sarraf, continues the tradition of excellence, balancing the latest scientific research and clinical correlations and covering everything you need to know on retinal diagnosis, treatment, development, structure, function, and pathophysiology. More than 300 global contributors share their knowledge and expertise to create the most comprehensive reference available on retina today. Features sweeping content updates, including new insights into the fundamental pathogenic mechanisms of age-related macular degeneration, advances in imaging including OCT angiography and intraoperative OCT, new therapeutics for retinal vascular disease and AMD, novel immune-based therapies for uveitis, and the latest in instrumentation and techniques for vitreo-retinal surgery. Includes five new chapters covering Artificial Intelligence and Advanced Imaging Analysis, Pachychoroid Disease and Its Association with Polypoidal Choroidal Vasculopathy, Retinal Manifestations of Neurodegeneration, Microbiome and Retinal Disease, and OCT-Angiography. Includes more than 50 video clips (35 new to this edition) highlighting the latest surgical techniques, imaging guidance, and coverage of complications of vitreoretinal surgery. New videos cover Scleral Inlay for Recurrent Optic Nerve Pit Masculopathy, Trauma with Contact Lens, Recurrent Retinal Detachment due to PVR, Asteroid Hyalosis, and many more. Contains more than 2,000 high-quality images (700 new to this edition) including anatomical illustrations, clinical and surgical photographs, diagnostic imaging, decision trees, and graphs.
System Biology Methods and Tools for Integrating Omics Data Liang Cheng 2020-12-31 This eBook is a collection of articles from a Frontiers Research Topic. Frontiers Research Topics are very popular trademarks of the Frontiers Journals Series: they are collections of at least ten articles, all centered on a particular subject. With their unique mix of varied contributions from Original Research to Review Articles, Frontiers Research Topics unify the most influential researchers, the latest key findings and historical advances in a hot research area! Find out more on how to host your own Frontiers Research Topic or contribute to one as an author by contacting the Frontiers Editorial Office: frontiersin.org/about/contact.
Discrete Geometry and Mathematical Morphology Joakim Lindblad 2021-05-15 This book constitutes the proceedings of the First IAPR International Conference on Discrete Geometry and Mathematical Morphology, DGMM 2021, which was held during May 24-27, 2021, in Uppsala, Sweden. The conference was created by joining the International Conference on Discrete Geometry for computer Imagery, DGCI, with the International Symposium on Mathematical Morphology, ISMM. The 36 papers included in this volume were carefully reviewed and selected from 59 submissions. They were organized in topical sections as follows: applications in image processing, computer vision, and pattern recognition; discrete and combinatorial topology; discrete geometry - models, transforms, visualization; discrete tomography and inverse problems; hierarchical and graph-based models, analysis and segmentation; learning-based approaches to mathematical morphology; multivariate and PDE-based mathematical morphology, morphological filtering. The book also contains 3 invited keynote papers.
Decision Making Under Uncertainty Mykel J. Kochenderfer 2015-07-17 An introduction to decision making under uncertainty from a computational perspective, covering both theory and applications ranging from speech recognition to airborne collision avoidance. Many important problems involve decision making under uncertainty—that is, choosing actions based on often imperfect observations, with unknown outcomes. Designers of automated decision support systems must take into account the various sources of uncertainty while balancing the multiple objectives of the system. This book provides an introduction to the challenges of decision making under uncertainty from a computational perspective. It presents both the theory behind decision making models and algorithms and a collection of example applications that range from speech recognition to aircraft collision avoidance. Focusing on two methods for designing decision agents, planning and reinforcement learning, the book covers probabilistic models, introducing Bayesian networks as a graphical model that captures probabilistic relationships between variables; utility theory as a framework for understanding optimal decision making under uncertainty; Markov decision processes as a method for modeling sequential problems; model uncertainty; state uncertainty; and cooperative decision making involving multiple interacting agents. A series of applications shows how the theoretical concepts can be applied to systems for attribute-based person search, speech applications, collision avoidance, and unmanned aircraft persistent surveillance. Decision Making Under Uncertainty unifies research from different communities using consistent notation, and is accessible to students and researchers across engineering disciplines who have some prior exposure to probability theory and calculus. It can be used as a text for advanced undergraduate and graduate students in fields including computer science, aerospace and electrical engineering, and management science. It will also be a valuable professional reference for researchers in a variety of disciplines.
Intelligent Computing in Engineering Vijender Kumar Solanki 2020-04-09 This book comprises select papers from the international conference on Research in Intelligent and Computing in Engineering (RICE 2019) held at Hanoi University of Industry, Hanoi, Vietnam. The volume focuses on current research on various computing models such as centralized, distributed, cluster, grid and cloud. The contents cover recent advances in wireless sensor networks, mobile ad hoc networks, internet of things, machine learning, grid and cloud computing, and their various applications. The book will help researchers as well as professionals to gain insight into the rapidly evolving fields of internet computing and data mining.
Math Curse Jon Scieszka 1995-10-01 Did you ever wake up to one of those days where everything is a problem? You have 10 things to do, but only 30 minutes until your bus leaves. Is there enough time? You have 3 shirts and 2 pairs of pants. Can you make 1 good outfit? Then you start to wonder: Why does everything have to be such a problem? Why do 2 apples always have to be added to 5 oranges? Why do 4 kids always have to divide 12 marbles? Why can't you just keep 10 cookies without someone taking 3 away? Why? Because you're the victim of a Math Curse. That's why. But don't despair. This is one girl's story of how that curse can be broken.
Edexcel AS and a Level Modular Mathematics Core Mathematics 1 C1 Greg Attwood 2008-04 "This book helps in raising and sustaining motivation for better grades. These books are the best possible match to the specification, motivating readers by making maths easier to learn. They include complete past exam papers and student-friendly worked solutions which build up to practice questions, for all round exam preparation. These books also feature real-life applications of maths through the 'Life-links' and 'Why ...?' pages to show readers how this maths relates, presenting opportunities to stretch and challenge more apply students. Each book includes a Live Text CDROM which features: fully worked solutions examined step-by-step, animations for key learning points, and revision support through the Exam Cafe."--Publisher's description
Understanding Machine Learning Shai Shalev-Shwartz 2014-05-19 Introduces machine learning and its algorithmic paradigms, explaining the principles behind automated learning approaches and the considerations underlying their usage.
Object Recognition M. Bennamoun 2001-12-12 Automatie object recognition is a multidisciplinary research area using con cepts and tools from mathematics, computing, optics, psychology, pattern recognition, artificial intelligence and various other disciplines. The purpose of this research is to provide a set of coherent paradigms and algorithms for the purpose of designing systems that will ultimately emulate the functions performed by the Human Visual System (HVS). Hence, such systems should have the ability to recognise objects in two or three dimensions independently of their positions, orientations or scales in the image. The HVS is employed for tens of thousands of recognition events each

day, ranging from navigation (through the recognition of landmarks or signs), right through to communication (through the recognition of characters or people themselves). Hence, the motivations behind the construction of recognition systems, which have the ability to function in the real world, is unquestionable and would serve industrial (e.g. quality control), military (e.g. automatie target recognition) and community needs (e.g. aiding the visually impaired). Scope, Content and Organisation of this Book This book provides a comprehensive, yet readable foundation to the field of object recognition from which research may be initiated or guided. It repre sents the culmination of research topics that I have either covered personally or in conjunction with my PhD students. These areas include image acqui sition, 3-D object reconstruction, object modelling, and the matching of ob jects, all of which are essential in the construction of an object recognition system.

The Pixel Eye Paul Levinson 2003-08-02 NYPD forensic detective Dr. Phil D'Amato's latest futuristic adventure pits personal loyalties against public responsibilities, safety against freedom, and the right to know against animal rights, all against a backdrop of a post 9/11 New York City.

Energy Minimization Methods in Computer Vision and Pattern Recognition Xue-Cheng Tai 2015-01-07 This volume constitutes the refereed proceedings of the 10th International Conference on Energy Minimization Methods in Computer Vision and Pattern Recognition, EMMCVPR 2015, held in Hong Kong, China, in January 2015. The 36 revised full papers were carefully reviewed and selected from 45 submissions. The papers are organized in topical sections on discrete and continuous optimization; image restoration and inpainting; segmentation; PDE and variational methods; motion, tracking and multiview reconstruction; statistical methods and learning; and medical image analysis.

Emerging Technologies for Healthcare Monika Mangla 2021-07-20 ?Emerging Technologies for Healthcare? beginnt mit einer IoT-basierten Lösung für die Automatisierung im Gesundheitssektor, wodurch Verfahren auf Grundlage von fortschrittlichen Deep-Learning-Techniken ermöglicht werden. Praktische Lösungen, die auf verschiedenen Ansätzen des maschinellen Lernens beruhen, werden vorgestellt und auf die Analyse und Vorhersage von Krankheiten angewandt. Ein Beispiel ist die Nutzung einer dreidimensionalen Matrix für die Behandlung chronischer Nierenerkrankungen, die Diagnose und Prognose des erworbenen demyelinisierenden Syndroms und von Autismus-Spektrum-Störungen sowie die Erkennung von Lungenentzündungen. Außerdem werden verschiedene geeignete Ansätze vorgestellt, wie die Gesundheitssysteme mit COVID-19-Fällen umgehen können. Daneben wird ein detaillierter Erkennungsmechanismus dargelegt, mit dessen Hilfe Lösungen entwickelt werden können, um von der Handschrift auf die Persönlichkeit zu schließen, und es werden neuartige Ansätze für die Stimmungsanalyse aufgezeigt, die mit ausreichenden Daten und verschiedenen Betrachtungsweisen untermauert sind. Dieses Buch enthält nicht nur theoretische Ansätze und Algorithmen, sondern zeigt auch auf, welche Schritte bei der Problemanalyse mithilfe von Daten, Prozessen, Berichten und Optimierungstechniken durchlaufen werden. Es ist ein umfassendes Nachschlagewerk für die Lösung verschiedener Probleme anhand von Algorithmen für das maschinelle Lernen.