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KEY=WITH - BRENDEN BRADFORD

Pyomo - Optimization Modeling in Python Springer Science & Business Media This book provides a complete and comprehensive reference/guide to Pyomo (Python Optimization Modeling Objects) for both beginning and advanced modelers, including students at the undergraduate and graduate levels, academic researchers, and practitioners. The text illustrates the breadth of the modeling and analysis capabilities that are supported by the software and support of complex real-world applications. Pyomo is an open source software package for formulating and solving large-scale optimization and operations research problems. The text begins with a tutorial on simple linear and integer programming models. A detailed reference of Pyomo's modeling components is illustrated with extensive examples, including a discussion of how to load data from data sources like spreadsheets and databases. Chapters describing advanced modeling capabilities for nonlinear and stochastic optimization are also included. The Pyomo software provides familiar modeling features within Python, a powerful dynamic programming language that has a very clear, readable syntax and intuitive object orientation. Pyomo includes Python classes for defining sparse sets, parameters, and variables, which can be used to formulate algebraic expressions that define objectives and constraints. Moreover, Pyomo can be used from a command-line interface and within Python's interactive command environment, which makes it easy to create Pyomo models, apply a variety of optimizers, and examine solutions. The software supports a different modeling approach than commercial AML (Algebraic Modeling Languages) tools, and is designed for flexibility, extensibility, portability, and maintainability but also maintains the central ideas in modern AMLs. **Hidden Link Prediction in Stochastic Social Networks IGI Global** Link prediction is required to understand the evolutionary theory of computing for different social networks. However, the stochastic growth of the social network leads to various challenges in identifying hidden links, such as representation of graph, distinction between spurious and missing links, selection of link prediction techniques comprised of network features, and identification of network types. Hidden Link Prediction in Stochastic Social Networks concentrates on the foremost techniques of hidden link predictions in stochastic social networks including methods and approaches that involve similarity index techniques, matrix factorization, reinforcement, models, and graph representations and community detections. The book also includes miscellaneous methods of different modalities in deep learning, agent-driven AI techniques, and automata-driven systems and will improve the understanding and development of automated machine learning systems for supervised, unsupervised, and recommendation-driven learning systems. It is intended for use by data scientists, technology developers, professionals, students, and researchers. **Deep Learning on Graphs Cambridge University Press** A comprehensive text on foundations and techniques of graph neural networks with applications in NLP, data mining, vision and healthcare. **Mastering Large Datasets with Python Parallelize and Distribute Your Python Code Simon and Schuster Summary** Modern data science solutions need to be clean, easy to read, and scalable. In Mastering Large Datasets with Python, author J.T. Wolohan teaches you how to take a small project and scale it up using a functionally influenced approach to Python coding. You'll explore methods and built-in Python tools that lend themselves to clarity and scalability, like the high-performing parallelism method, as well as distributed technologies that allow for high data throughput. The abundant hands-on exercises in this practical tutorial will lock in these essential skills for any large-scale data science project. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Programming techniques that work well on laptop-sized data can slow to a crawl—or fail altogether—when applied to massive files or distributed datasets. By mastering the powerful map and reduce paradigm, along with the Python-based tools that support it, you can write data-centric applications that scale efficiently without requiring codebase rewrites as your requirements change. About the book Mastering Large Datasets with Python teaches you to write code that can handle datasets of any size. You'll start with laptop-sized datasets that teach you to parallelize data analysis by breaking large tasks into smaller ones that can run simultaneously. You'll then scale those same programs to industrial-sized datasets on a cluster of cloud servers. With the map and reduce paradigm firmly in place, you'll explore tools like Hadoop and PySpark to efficiently process massive distributed datasets, speed up decision-making with machine learning, and simplify your data storage with AWS S3. What's inside An introduction to the map and reduce paradigm Parallelization with the multiprocessing module and pathos framework Hadoop and Spark for distributed computing Running AWS jobs to process large datasets About the reader For Python programmers who need to work faster with more data. About the author J. T. Wolohan is a lead data scientist at Booz Allen Hamilton, and a PhD researcher at Indiana University, Bloomington. Table of Contents: PART 1 1 | Introduction 2 | Accelerating large dataset work: Map and parallel computing 3 | Function pipelines for mapping complex transformations 4 | Processing large datasets with lazy workflows 5 | Accumulation operations with reduce 6 | Speeding up map and reduce with advanced parallelization PART 2 7 | Processing truly big datasets with Hadoop and Spark 8 | Best practices for large data with Apache Streaming and mrjob 9 | PageRank with map and reduce in PySpark 10 | Faster decision-making with machine learning and PySpark PART 3 11 | Large datasets in the cloud with Amazon Web Services and S3 12 | MapReduce in the cloud with Amazon's Elastic MapReduce **Mathematics of Epidemics on Networks From Exact to Approximate Models Springer** This textbook provides an exciting new addition to the area of network science featuring a stronger and more methodical link of models to their mathematical origin and explains how these relate to each other with special focus on epidemic spread on networks. The content of the book is at the interface of graph theory, stochastic processes and dynamical systems. The authors set out to make a significant contribution to closing the gap between model development and the supporting mathematics. This is done by: Summarising and presenting the state-of-the-art in modeling epidemics on networks with results and readily usable models signposted throughout the book; Presenting different mathematical approaches to formulate exact and solvable models; Identifying the concrete links between approximate models and their rigorous mathematical representation; Presenting a model hierarchy and clearly highlighting the links between model assumptions and model complexity; Providing a reference source for advanced undergraduate students, as well as doctoral students, postdoctoral researchers and academic experts who are engaged in modeling stochastic processes on networks; Providing software that can solve differential equation models or directly simulate epidemics on networks. Replete with numerous diagrams, examples, instructive exercises, and online access to simulation algorithms and readily usable code, this book will appeal to a wide spectrum of readers from different backgrounds and academic levels. Appropriate for students with or without a strong background in mathematics, this textbook can form the basis of an advanced undergraduate or graduate course in both mathematics and other departments alike. **Analysis of Phylogenetics and Evolution with R Springer Science & Business Media** The increasing availability of molecular and genetic databases coupled with the growing power of computers gives biologists opportunities to address new issues, such as the patterns of molecular evolution, and re-assess old ones, such as the role of adaptation in species diversification. In the second edition, the book continues to integrate a wide variety of data analysis methods into a single and flexible interface: the R language. This open source language is available for a wide range of computer systems and has been adopted as a computational environment by many authors of statistical software. Adopting R as a main tool for phylogenetic analyses will ease the workflow in biologists' data analyses, ensure greater scientific repeatability, and enhance the exchange of ideas and methodological developments. The second edition is completed updated, covering the full gamut of R packages for this area that have been introduced to the market since its previous publication five years ago. There is also a new chapter on the simulation of evolutionary data. Graduate students and researchers in evolutionary biology can use this book as a reference for data analyses, whereas researchers in bioinformatics interested in evolutionary analyses will learn how to implement these methods in R. The book starts with a presentation of different R packages and gives a short introduction to R for phylogeneticists unfamiliar with this language. The basic phylogenetic topics are covered: manipulation of phylogenetic data, phylogeny estimation, tree drawing, phylogenetic comparative methods, and estimation of ancestral characters. The chapter on tree drawing uses R's powerful graphical environment. A section deals with the analysis of diversification with phylogenies, one of the author's favorite research topics. The last chapter is devoted to the development of phylogenetic methods with R and interfaces with other languages (C and C++). Some exercises conclude these chapters. **Minimum-Distortion Embedding Minimum-Distortion Embedding** describes the theory behind and practical use of a cutting-edge artificial intelligence technique. Accompanied by an open-source software package, PyMDE, it illustrates applying these AI techniques in areas such as images, co- networks, demographics, genetics, and biology. **Social, Cultural, and Behavioral Modeling 13th International Conference, SBP-BRIMS 2020, Washington, DC, USA, October 18-21, 2020, Proceedings Springer Nature** This book constitutes the proceedings of the 13th International Conference on Social, Cultural, and Behavioral Modeling, SBP-BRIMS 2020, which was planned to take place in Washington, DC, USA. Due to the COVID-19 pandemic the conference was held online during October 18-21, 2020. The 33 full papers presented in this volume were carefully reviewed and selected from 66 submissions. A wide number of disciplines are represented including computer science, psychology, sociology, communication science, public health, bioinformatics, political science, and organizational science. Numerous types of computational methods are used, such as machine learning, language technology, social network analysis and visualization, agent-based simulation, and statistics. **Social and Economic Networks Princeton University Press** Networks of relationships help determine the careers that people choose, the jobs they obtain, the products they buy, and how they vote. The many aspects of our lives that are governed by social networks make it critical to understand how they impact behavior, which network structures are likely to emerge in a society, and why we organize ourselves as we do. In Social and Economic Networks, Matthew Jackson offers a comprehensive introduction to social and economic networks, drawing on the latest findings in economics, sociology, computer science, physics, and mathematics. He provides empirical background on networks and the regularities that they exhibit, and discusses random graph-based models and strategic models of network formation. He helps readers to understand behavior in networked societies, with a detailed analysis of learning and diffusion in networks, decision making by individuals who are influenced by their social neighbors, game theory and markets on networks, and a host of related subjects. Jackson also describes the varied statistical and modeling techniques used to analyze social networks. Each chapter includes exercises to aid students in their analysis of how networks function. This book is an indispensable resource for students and researchers in economics, mathematics, physics, sociology, and business. **Proceedings of the 8th Python in Science Conference Lulu.com** The proceedings of the 8th annual Python for Scientific Computing conference. **Evolutionary Genomics Statistical and Computational Methods What is Social Network Analysis? A&C Black** Part of the What is...? series, this book is an introductory guide providing explanations of the nature of social network methods. **Analysis of Images, Social Networks and Texts 8th International Conference, AIST 2019, Kazan, Russia, July 17-19, 2019, Revised Selected Papers Springer Nature** This book constitutes the proceedings of the 8th International Conference on Analysis of Images, Social Networks and Texts, AIST 2019, held in Kazan, Russia, in July 2019. The 24 full papers and 10 short papers were carefully reviewed and selected from 134 submissions (of which 21 papers were rejected without being reviewed). The papers are organized in topical sections on general topics of data analysis; natural language processing; social network analysis; analysis of images and video; optimization problems on graphs and network structures; analysis of dynamic behaviour through event data. **Statistical Analysis of Network Data with R Springer** Networks have permeated everyday life through everyday realities like the Internet, social networks, and viral marketing. As such, network analysis is an important growth area in the quantitative sciences, with roots in social network analysis going back to the 1930s and graph theory going back centuries. Measurement and analysis are integral components of network research. As a result, statistical methods play a critical role in network analysis. This book is the first of its kind in network research. It can be used as a stand-alone resource in which multiple R packages are used to illustrate how to conduct a wide range of network analyses, from basic manipulation and visualization, to summary and characterization, to modeling of network data. The central package is igraph, which provides extensive capabilities for studying network graphs in R. This text builds on Eric D. Kolaczyk's book Statistical Analysis of Network Data (Springer, 2009). **Statistical Mechanics Entropy, Order Parameters, and Complexity Oxford University Press** Sethna distills the core ideas of statistical mechanics to make room for new advances important to information theory, complexity, and modern biology. He explores everything from chaos through to life at the end of the universe. **Machine Learning, Optimization, and Data Science 5th International Conference, LOD 2019, Siena, Italy, September 10-13, 2019, Proceedings Springer Nature** This book constitutes the post-conference proceedings of the 5th International Conference on Machine Learning, Optimization, and Data Science, LOD 2019, held in Siena, Italy, in September 2019. The 54 full papers presented were carefully reviewed and selected from 158 submissions. The papers cover topics in the field of machine learning, artificial intelligence, reinforcement learning, computational optimization and data science presenting a substantial array of ideas, technologies, algorithms, methods and applications. **A Beginner's Guide to Learning Analytics Springer Nature** This book A Beginner's Guide to Learning

Analytics is designed to meet modern educational trends' needs. It is addressed to readers who have no prior knowledge of learning analytics and functions as an introductory text to learning analytics for those who want to do more with evaluation/assessment in their organizations. The book is useful to all who need to evaluate their learning and teaching strategies. It aims to bring greater efficiency and deeper engagement to individual students, learning communities, and educators. Covered here are the key concepts linked to learning analytics for researchers and practitioners interested in learning analytics. This book helps those who want to apply analytics to learning and development programs and helps educational institutions to identify learners who require support and provide a more personalized learning experience. Like chapters show diverse uses of learning analytics to enhance student and faculty performance. It presents a coherent framework for the effective translation of learning analytics research for educational practice to its practical application in different educational domains. This book provides educators and researchers with the tools and frameworks to effectively make sense of and use data and analytics in their everyday practice. This book will be a valuable addition to researchers' bookshelves.

Effective Computation in Physics Field Guide to Research with Python "O'Reilly Media, Inc." More physicists today are taking on the role of software developer as part of their research, but software development isn't always easy or obvious, even for physicists. This practical book teaches essential software development skills to help you automate and accomplish nearly any aspect of research in a physics-based field. Written by two PhDs in nuclear engineering, this book includes practical examples drawn from a working knowledge of physics concepts. You'll learn how to use the Python programming language to perform everything from collecting and analyzing data to building software and publishing your results. In four parts, this book includes: Getting Started: Jump into Python, the command line, data containers, functions, flow control and logic, and classes and objects Getting It Done: Learn about regular expressions, analysis and visualization, NumPy, storing data in files and HDF5, important data structures in physics, computing in parallel, and deploying software Getting It Right: Build pipelines and software, learn to use local and remote version control, and debug and test your code Getting It Out There: Document your code, process and publish your findings, and collaborate efficiently: dive into software licenses, ownership, and copyright procedures

Towards New E-Infrastructure and E-Services for Developing Countries 12th EAI International Conference, AFRICOMM 2020, Ebène City, Mauritius, December 2-4, 2020, Proceedings Springer Nature This book constitutes the thoroughly refereed proceedings of the 12th International Conference on e-Infrastructure and e-Services for Developing Countries, AFRICOMM 2020, held in Ebène City, Mauritius, in December 2020. Due to COVID-19 pandemic the conference was held virtually. The 20 full papers were carefully selected from 90 submissions. The papers are organized in four thematic sections on dynamic spectrum access and mesh networks; wireless sensing and 5G networks; software-defined networking; Internet of Things; e-services and big data; DNS resilience and performance. .

High Performance Computing ISC High Performance 2020 International Workshops, Frankfurt, Germany, June 21-25, 2020, Revised Selected Papers Springer Nature This book constitutes the refereed post-conference proceedings of 10 workshops held at the 35th International ISC High Performance 2020 Conference, in Frankfurt, Germany, in June 2020: First Workshop on Compiler-assisted Correctness Checking and Performance Optimization for HPC (C3PO); First International Workshop on the Application of Machine Learning Techniques to Computational Fluid Dynamics Simulations and Analysis (CFDML); HPC I/O in the Data Center Workshop (HPC-IODC); First Workshop \Machine Learning on HPC Systems" (MLHPCS); First International Workshop on Monitoring and Data Analytics (MODA); 15th Workshop on Virtualization in High-Performance Cloud Computing (VHPC). The 25 full papers included in this volume were carefully reviewed and selected. They cover all aspects of research, development, and application of large-scale, high performance experimental and commercial systems. Topics include high-performance computing (HPC), computer architecture and hardware, programming models, system software, performance analysis and modeling, compiler analysis and optimization techniques, software sustainability, scientific applications, deep learning.

Graph Mining Laws, Tools, and Case Studies Springer Nature What does the Web look like? How can we find patterns, communities, outliers, in a social network? Which are the most central nodes in a network? These are the questions that motivate this work. Networks and graphs appear in many diverse settings, for example in social networks, computer-communication networks (intrusion detection, traffic management), protein-protein interaction networks in biology, document-text bipartite graphs in text retrieval, person-account graphs in financial fraud detection, and others. In this work, first we list several surprising patterns that real graphs tend to follow. Then we give a detailed list of generators that try to mirror these patterns. Generators are important, because they can help with "what if" scenarios, extrapolations, and anonymization. Then we provide a list of powerful tools for graph analysis, and specifically spectral methods (Singular Value Decomposition (SVD)), tensors, and case studies like the famous "pageRank" algorithm and the "HITS" algorithm for ranking web search results. Finally, we conclude with a survey of tools and observations from related fields like sociology, which provide complementary viewpoints. Table of Contents: Introduction / Patterns in Static Graphs / Patterns in Evolving Graphs / Patterns in Weighted Graphs / Discussion: The Structure of Specific Graphs / Discussion: Power Laws and Deviations / Summary of Patterns / Graph Generators / Preferential Attachment and Variants / Incorporating Geographical Information / The RMat / Graph Generation by Kronecker Multiplication / Summary and Practitioner's Guide / SVD, Random Walks, and Tensors / Tensors / Community Detection / Influence/Virus Propagation and Immunization / Case Studies / Social Networks / Other Related Work / Conclusions

Extracting Spatial Information from Historical Maps Algorithms and Interaction BoD - Books on Demand Historical maps are fascinating documents and a valuable source of information for scientists of various disciplines. Many of these maps are available as scanned bitmap images, but in order to make them searchable in useful ways, a structured representation of the contained information is desirable. This book deals with the extraction of spatial information from historical maps. This cannot be expected to be solved fully automatically (since it involves difficult semantics), but is also too tedious to be done manually at scale. The methodology used in this book combines the strengths of both computers and humans: it describes efficient algorithms to largely automate information extraction tasks and pairs these algorithms with smart user interactions to handle what is not understood by the algorithm. The effectiveness of this approach is shown for various kinds of spatial documents from the 16th to the early 20th century.

Data Driven Approach Towards Disruptive Technologies Proceedings of MIDAS 2020 Springer Nature This book is a compilation of peer-reviewed papers presented at the International Conference on Machine Intelligence and Data Science Applications, organized by the School of Computer Science, University of Petroleum & Energy Studies, Dehradun, India, during 4-5 September 2020. The book addresses the algorithmic aspect of machine intelligence which includes the framework and optimization of various states of algorithms. Variety of papers related to wide applications in various fields like data-driven industrial IoT, bioinformatics, network and security, autonomous computing and various other aligned areas. The book concludes with interdisciplinary applications like legal, health care, smart society, cyber-physical system and smart agriculture. All papers have been carefully reviewed. The book is of interest to computer science engineers, lecturers/researchers in machine intelligence discipline and engineering graduates.

Network Science Cambridge University Press Illustrated throughout in full colour, this pioneering text is the only book you need for an introduction to network science.

Malware Data Science Attack Detection and Attribution No Starch Press Malware Data Science explains how to identify, analyze, and classify large-scale malware using machine learning and data visualization. Security has become a "big data" problem. The growth rate of malware has accelerated to tens of millions of new files per year while our networks generate an ever-larger flood of security-relevant data each day. In order to defend against these advanced attacks, you'll need to know how to think like a data scientist. In Malware Data Science, security data scientist Joshua Saxe introduces machine learning, statistics, social network analysis, and data visualization, and shows you how to apply these methods to malware detection and analysis. You'll learn how to: - Analyze malware using static analysis - Observe malware behavior using dynamic analysis - Identify adversary groups through shared code analysis - Catch 0-day vulnerabilities by building your own machine learning detector - Measure malware detector accuracy - Identify malware campaigns, trends, and relationships through data visualization Whether you're a malware analyst looking to add skills to your existing arsenal, or a data scientist interested in attack detection and threat intelligence, Malware Data Science will help you stay ahead of the curve.

Networks, Crowds, and Markets Reasoning About a Highly Connected World Cambridge University Press Are all film stars linked to Kevin Bacon? Why do the stock markets rise and fall sharply on the strength of a vague rumour? How does gossip spread so quickly? Are we all related through six degrees of separation? There is a growing awareness of the complex networks that pervade modern society. We see them in the rapid growth of the Internet, the ease of global communication, the swift spread of news and information, and in the way epidemics and financial crises develop with startling speed and intensity. This introductory book on the new science of networks takes an interdisciplinary approach, using economics, sociology, computing, information science and applied mathematics to address fundamental questions about the links that connect us, and the ways that our decisions can have consequences for others.

Social Informatics 12th International Conference, SocInfo 2020, Pisa, Italy, October 6-9, 2020, Proceedings Springer Nature This volume constitutes the proceedings of the 12th International Conference on Social Informatics, SocInfo 2020, held in Pisa, Italy, in October 2020. The 30 full and 3 short papers presented in these proceedings were carefully reviewed and selected from 99 submissions. The papers presented in this volume cover a broad range of topics, ranging from works that ground information-system design on social concepts, to papers that analyze complex social systems using computational methods, or explore socio-technical systems using social sciences methods.

Principles and Practice of Constraint Programming 24th International Conference, CP 2018, Lille, France, August 27-31, 2018, Proceedings Springer This book constitutes the proceedings of the 24th International Conference on Principles and Practice of Constraint Programming, CP 2018, held in Lille, France, in August 2018. The 41 full and 9 short papers presented in this volume were carefully reviewed and selected from 114 submissions. They deal with all aspects of computing with constraints including theory, algorithms, environments, languages, models, systems, and applications such as decision making, resource allocation, scheduling, configuration, and planning. The papers were organized according to the following topics/tracks: main technical track; applications track; CP and data science; CP and music; CP and operations research; CP, optimization and power system management; multiagent and parallel CP; and testing and verification.

Application of Modern Heuristic Optimization Methods in Power and Energy Systems John Wiley & Sons Reviews state-of-the-art technologies in modern heuristic optimization techniques and presents case studies showing how they have been applied in complex power and energy systems problems Written by a team of international experts, this book describes the use of metaheuristic applications in the analysis and design of electric power systems. This includes a discussion of optimum energy and commitment of generation (nonrenewable & renewable) and load resources during day-to-day operations and control activities in regulated and competitive market structures, along with transmission and distribution systems. Applications of Modern Heuristic Optimization Methods in Power and Energy Systems begins with an introduction and overview of applications in power and energy systems before moving on to planning and operation, control, and distribution. Further chapters cover the integration of renewable energy and the smart grid and electricity markets. The book finishes with final conclusions drawn by the editors.

Applications of Modern Heuristic Optimization Methods in Power and Energy Systems: Explains the application of differential evolution in electric power systems' active power multi-objective optimal dispatch Includes studies of optimization and stability in load frequency control in modern power systems Describes optimal compliance of reactive power requirements in near-shore wind power plants Features contributions from noted experts in the field Ideal for power and energy systems designers, planners, operators, and consultants, Applications of Modern Heuristic Optimization Methods in Power and Energy Systems will also benefit engineers, software developers, researchers, academics, and students.

Theater as Data Computational Journeys into Theater Research University of Michigan Press In Theater as Data, Miguel Escobar Varela explores the use of computational methods and digital data in theater research. He considers the implications of these new approaches, and explains the roles that statistics and visualizations play. Reflecting on recent debates in the humanities, the author suggests that there are two ways of using data, both of which have a place in theater research. Data-driven methods are closer to the pursuit of verifiable results common in the sciences; and data-assisted methods are closer to the interpretive traditions of the humanities. The book surveys four major areas within theater scholarship: texts (not only playscripts but also theater reviews and program booklets); relationships (both the links between fictional characters and the collaborative networks of artists and producers); motion (the movement of performers and objects on stage); and locations (the coordinates of performance events, venues, and touring circuits). Theater as Data examines important contributions to theater studies from similar computational research, including in classical French drama, collaboration networks in Australian theater, contemporary Portuguese choreography, and global productions of Ibsen. This overview is complemented by short descriptions of the author's own work in the computational analysis of theater practices in Singapore and Indonesia. The author ends by considering the future of computational theater research, underlining the importance of open data and digital sustainability practices, and encouraging readers to consider the benefits of learning to code. A web companion offers illustrative data, programming tutorials, and videos.

Structural Optimizations in Strategic Medium Voltage Power System Planning Mutualistic Networks Princeton University Press Mutualistic interactions among plants and animals have played a paramount role in shaping biodiversity. Yet the majority of studies on mutualistic interactions have involved only a few species, as opposed to broader mutual connections between communities of organisms. Mutualistic Networks is the first book to comprehensively explore this burgeoning field. Integrating different approaches, from the statistical description of network structures to the development of new analytical frameworks, Jordi Bascompte and Pedro Jordano describe the architecture of these mutualistic networks and show their importance for the robustness of biodiversity and the coevolutionary process. Making a case for why we should care about mutualisms and their complex networks, this book offers a new perspective on the study and synthesis of this growing area for ecologists and evolutionary biologists. It will serve as the standard reference for all future work on mutualistic interactions in biological communities.

Managing Next Generation Networks and Services 10th Asia-Pacific Network Operations and Management Symposium, APNOMS 2007, Sapporo, Japan, October 10-12, 2007, Proceedings Springer Science & Business Media This book constitutes the refereed proceedings of the 9th Asia-Pacific Network Operations and Management Symposium, APNOMS 2007, held in Sapporo, Japan, October 2007. The 48 revised full papers and 30 revised short papers cover management of distributed networks, network configuration and planning, network security management, sensor and ad-hoc networks, network monitoring, routing and

traffic engineering, management of wireless networks and security on wireless networks. **Proceeding of International Conference on Computational Science and Applications ICCSA 2019 Springer Nature** The book consists of high-quality papers presented at the International Conference on Computational Science and Applications (ICCSA 2019), held at Maharashtra Institute of Technology World Peace University, Pune, India, from 7 to 9 August 2019. It covers the latest innovations and developments in information and communication technology, discussing topics such as soft computing and intelligent systems, web of sensor networks, drone operating systems, web of sensor networks, wearable smart sensors, automated guided vehicles and many more. **New Trends in Computer Technologies and Applications 23rd International Computer Symposium, ICS 2018, Yunlin, Taiwan, December 20-22, 2018, Revised Selected Papers Springer** The present book includes extended and revised versions of papers presented during the 2018 International Computer Symposium (ICS 2018), held in Yunlin, Republic of China (Taiwan), on December 20-22, 2018. The 86 papers presented were carefully reviewed and selected from 263 submissions from 11 countries. The variety of the topics include machine learning, sensor devices and platforms, sensor networks, robotics, embedded systems, networks, operating systems, software system structures, database design and models, multimedia and multimodal retrieval, object detection, image processing, image compression, mobile and wireless security. **Knowledge Discovery, Knowledge Engineering and Knowledge Management 11th International Joint Conference, IC3K 2019, Vienna, Austria, September 17-19, 2019, Revised Selected Papers Springer** This book constitutes the revised selected papers of the 11th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management, IC3K 2019, held in Vienna, Austria, in September 2019. The 25 full papers presented were carefully reviewed and selected from 220 submissions. The papers are organized in topical sections on knowledge discovery and information retrieval; knowledge engineering and ontology development; and knowledge management and information systems. **Applied Data Science in Tourism Interdisciplinary Approaches, Methodologies, and Applications Springer** Access to large data sets has led to a paradigm shift in the tourism research landscape. Big data is enabling a new form of knowledge gain, while at the same time shaking the epistemological foundations and requiring new methods and analysis approaches. It allows for interdisciplinary cooperation between computer sciences and social and economic sciences, and complements the traditional research approaches. This book provides a broad basis for the practical application of data science approaches such as machine learning, text mining, social network analysis, and many more, which are essential for interdisciplinary tourism research. Each method is presented in principle, viewed analytically, and its advantages and disadvantages are weighed up and typical fields of application are presented. The correct methodical application is presented with a "how-to" approach, together with code examples, allowing a wider reader base including researchers, practitioners, and students entering the field. The book is a very well-structured introduction to data science - not only in tourism - and its methodological foundations, accompanied by well-chosen practical cases. It underlines an important insight: data are only representations of reality, you need methodological skills and domain background to derive knowledge from them - Hannes Werthner, Vienna University of Technology Roman Egger has accomplished a difficult but necessary task: make clear how data science can practically support and foster travel and tourism research and applications. The book offers a well-taught collection of chapters giving a comprehensive and deep account of AI and data science for tourism - Francesco Ricci, Free University of Bozen-Bolzano This well-structured and easy-to-read book provides a comprehensive overview of data science in tourism. It contributes largely to the methodological repository beyond traditional methods. - Rob Law, University of Macau **Guide to NumPy 2nd Edition CreateSpace** This is the second edition of Travis Oliphant's A Guide to NumPy originally published electronically in 2006. It is designed to be a reference that can be used by practitioners who are familiar with Python but want to learn more about NumPy and related tools. In this updated edition, new perspectives are shared as well as descriptions of new distributed processing tools in the ecosystem, and how Numba can be used to compile code using NumPy arrays. Travis Oliphant is the co-founder and CEO of Continuum Analytics. Continuum Analytics develops Anaconda, the leading modern open source analytics platform powered by Python. Travis, who is a passionate advocate of open source technology, has a Ph.D. from Mayo Clinic and B.S. and M.S. degrees in Mathematics and Electrical Engineering from Brigham Young University. Since 1997, he has worked extensively with Python for computational and data science. He was the primary creator of the NumPy package and founding contributor to the SciPy package. He was also a co-founder and past board member of NumFOCUS, a non-profit for reproducible and accessible science that supports the PyData stack. He also served on the board of the Python Software Foundation. **Visual Analysis of Multilayer Networks Morgan & Claypool Publishers** This is an overview and structured analysis of contemporary multilayer network visualization. It surveys techniques as well as tools, tasks, and analytics from within application domains. It also identifies research opportunities and examines outstanding challenges along with potential solutions and future research directions for addressing them. Visual Analysis of Multilayer Networks is not only for visualization researchers, but for those who need to visualize multilayer networks in the domain of complex systems, as well as anyone solving problems within application domains. The emergence of multilayer networks as a concept from the field of complex systems provides many new opportunities for the visualization of network complexity, and has also raised many new exciting challenges. The multilayer network model recognizes that the complexity of relationships between entities in real-world systems is better embraced as several interdependent subsystems (or layers) rather than a simple graph approach. Despite only recently being formalized and defined, this model can be applied to problems in the domains of life sciences, sociology, digital humanities, and more. Within the domain of network visualization there already are many existing systems, which visualize data sets having many characteristics of multilayer networks, and many techniques, which are applicable to their visualization. **Computational Intelligence for Managing Pandemics Walter de Gruyter GmbH & Co KG** This book uncovers the stakes and possibilities of handling pandemic diseases with the help of Computational Intelligence, using cases and applications from the current Covid-19 pandemic. The book chapters will focus on the application of CI and its related fields in managing different aspects of Covid-19, including modelling of the disease spread, data-driven prediction, identification of disease hotspots, and medical decision support.