
Chapter 1 Concepts And Methods In Biology

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Data Mining: Concepts, Methodologies, Tools, and Applications Academic Press
This book introduces multiple criteria and multiple constraint levels linear programming (MC2LP), which is an extension of linear programming (LP) and multiple criteria linear programming (MCLP). In the last decade, the author and a group of researchers from the USA, China, Korea, Germany, and Hungary have been working on the theory and applications of MC2LP problems. This volume integrates their main

research results ranging from theoretical bases to broad areas of real world applications. The theoretical bases include the formulation of MC2LP; integer MC2LP and MC2 transportation model; fuzzy MC2LP and fuzzy duality of MC2LP; optimal system designs and contingency plans; MC2 decision support system; and MC2 computer software development. The application areas are accounting, management information systems, production planning, and telecommunications management. The book serves as

a seminar text for both undergraduates and graduates who have a linear algebra or equivalent background. For practitioners, it will help in handling LP type problems in multiple decision making environment.

Environmental Information Systems: Concepts, Methodologies, Tools, and Applications IGI Global

The complexity of biological systems has intrigued scientists from many disciplines and has given birth to the highly influential field of systems biology wherein a wide array of mathematical techniques, such as flux balance analysis, and technology platforms, such as next generation sequencing, is used to understand, elucidate, and predict the functions of complex

biological systems. More recently, the field of synthetic biology, i.e., de novo engineering of biological systems, has emerged. Scientists from various fields are focusing on how to render this engineering process more predictable, reliable, scalable, affordable, and easy. Systems and control theory is a branch of engineering and applied sciences that rigorously deals with the complexities and uncertainties of interconnected systems with the objective of characterising fundamental systemic properties such as stability, robustness, communication capacity, and other performance metrics. Systems and control theory also strives to offer concepts and methods that facilitate the design of systems with rigorous guarantees on these properties. Over the last 100 years, it has made stellar theoretical and technological contributions in diverse fields such as aerospace,

telecommunication, storage, automotive, power systems, and others. Can it have, or evolve to have, a similar impact in biology? The chapters in this book demonstrate that, indeed, systems and control theoretic concepts and techniques can have a significant impact in systems and synthetic biology. Volume I provides a panoramic view that illustrates the potential of such mathematical methods in systems and synthetic biology. Recent advances in systems and synthetic biology have clearly demonstrated the benefits of a rigorous and systematic approach rooted in the principles of systems and control theory - not only does it lead to exciting insights and discoveries but it also reduces the inordinately lengthy trial-and-error process of wet-lab experimentation, thereby facilitating significant savings in human and financial resources. In Volume I, some of the leading researchers in the field of systems and synthetic biology demonstrate how systems and control theoretic concepts and techniques can be useful, or should evolve to be useful, in order to understand how biological systems function. As the eminent computer scientist Donald Knuth put it, "biology easily has 500 years of exciting problems to work on". This edited book presents but a small fraction of those for the benefit of (1) systems and control theorists interested in molecular and cellular biology and (2) biologists interested in rigorous modelling, analysis and control of biological systems.

Space, Time, and Archaeological Landscapes IGI Global

The last 20 years have witnessed a proliferation of new approaches in archaeological data recovery, analysis, and theory building that incorporate both new forms of information and new methods for investigating them. The growing importance of survey has meant

an expansion of the spatial realm of traditional archaeological data recovery and analysis from its traditional focus on specific locations on the landscape-archaeological sites-to the incorporation of data both on-site and off-site from across extensive regions. Evolving survey methods have led to experiments with nonsite and distributional data recovery as well as the critical evaluation of the definition and role of archaeological sites in data recovery and analysis. In both survey and excavation, the geomorphological analysis of land scapes has become increasingly important in the analysis of archaeological materials. Ethnoarchaeology-the use of ethnography to sharpen archaeological understanding of cultural and natural formation processes-has concentrated study on the formation processes underlying the content and structure of archaeological deposits. These actualistic studies consider patterns of deposition at the site level and the material results of human organization at the regional scale. Ethnoarchaeological approaches have also

affected research in theoretical ways by expanding investigation into the nature and organization of systems of land use per se, thus providing direction for further study of the material results of those systems.

Sustainable Business: Concepts, Methodologies, Tools, and Applications
Springer

The Art and Science of Embodied Research Design: Concepts, Methods, and Cases offers some of the nascent perspectives that situate embodiment as a necessary element in human research.

This edited volume brings together philosophical foundations of embodiment research with application of embodied methods from several disciplines. The book is divided into two sections. Part I, **Concepts in Embodied Research Design**, suggests ways that embodied epistemology may bring deeper understanding to current research theory,

and describes the ways in which embodiment is an integral part of the research process. In Part II, Methods and Cases, chapters propose novel ways to operationalize embodied data in the research process. The section is divided into four sub-sections: Somatic Systems of Analysis, Movement Systems of Analysis, Embodied Interviews and Observations, and Creative and Mixed Methods. Each chapter proposes a method case; an example of a previously used research method that exemplifies the way in which embodiment is used in a study. As such, it can be used as scaffold for designing embodied methods that suits the researcher ' s needs. It is suited for many fields of study such as psychology, sociology, behavioral science, anthropology, education, and arts-based research. It will be useful for graduate

coursework in somatic studies or as a supplemental text for courses in traditional research design.

Social Science Research IGI Global

This book is designed to introduce doctoral and graduate students to the process of conducting scientific research in the social sciences, business, education, public health, and related disciplines. It is a one-stop, comprehensive, and compact source for foundational concepts in behavioral research, and can serve as a stand-alone text or as a supplement to research readings in any doctoral seminar or research methods class. This book is currently used as a research text at universities on six continents and will shortly be available in nine different languages.

Fuzzy Systems: Concepts, Methodologies, Tools, and Applications IGI Global

Ongoing advancements in modern technology have led to significant developments in intelligent systems. With the numerous applications available, it becomes imperative to conduct research and make further progress in this field.

Intelligent Systems: Concepts, Methodologies, Tools, and Applications contains a compendium of the latest academic material on the latest breakthroughs and recent progress in intelligent systems. Including innovative studies on information retrieval, artificial intelligence, and software engineering, this multi-volume book is an ideal source for researchers, professionals, academics, upper-

level students, and practitioners interested in emerging perspectives in the field of intelligent systems.

Leadership and Personnel Management: Concepts, Methodologies, Tools, and Applications IGI Global

Digital Video Concepts, Methods, and Metrics: Quality, Compression, Performance, and Power Trade-off Analysis is a concise reference for professionals in a wide range of applications and vocations. It focuses on giving the reader mastery over the concepts, methods and metrics of digital video coding, so that readers have sufficient understanding to choose and tune coding parameters for optimum results that would suit their particular needs for quality, compression, speed and power. The practical aspects are many: Uploading video to the Internet is only the beginning of a trend where a consumer controls video quality and speed by trading off various other factors. Open source and proprietary applications

such as video e-mail, private party content generation, editing and archiving, and cloud asset management would give further control to the end-user. Digital video is frequently compressed and coded for easier storage and transmission. This process involves visual quality loss due to typical data compression techniques and requires use of high performance computing systems. A careful balance between the amount of compression, the visual quality loss and the coding speed is necessary to keep the total system cost down, while delivering a good user experience for various video applications. At the same time, power consumption optimizations are also essential to get the job done on inexpensive consumer platforms. Trade-offs can be made among these factors, and relevant considerations are particularly important in resource-constrained low power devices. To better understand the trade-offs this book discusses a comprehensive set of engineering principles, strategies, methods and metrics. It also exposes

readers to approaches on how to differentiate and rank video coding solutions.

Sustainable Airport Construction Practices
Bentham Science Publishers

In order to succeed in today's increasingly competitive environment, corporations, companies, governments, and nonprofit organizations must be conversant with modern project management techniques. This is especially true for individuals looking to remain professionally competitive. Illustrating the why, what, and how of project management, *Project Management Concepts, Methods, and Techniques* will help readers develop and refine the skills needed to achieve strategic objectives. It presents a balanced blend of detailed explanatory texts and more than

200 illustrations to supply readers with actionable knowledge that can be put to use immediately. Completely aligned with the Project Management Institute Body of Knowledge (PMBOK® Guide), this book is the ideal platform for developing the understanding needed to plan, schedule, and deliver successful projects. Explaining how to recognize performance obstacles, it supplies time-tested strategies to help you: Overcome performance obstacles and produce positive results Master the communication and relationship management techniques required for success Develop and refine the core project management skills needed to manage projects in multi-disciplinary and cross-functional environments Filled with

exercises, worked-through answers, and self-assessment techniques, this book is an ideal guide for anyone who works directly or indirectly with the management of projects. It illustrates a wide range of real-world situations to help you develop the real-world knowledge needed to consistently deliver projects that meet and exceed stakeholder requirements well into the future.

Human-Computer Interaction: Concepts, Methodologies, Tools, and Applications

Pearson

Through expanded intelligence, the use of robotics has fundamentally transformed the business industry. Providing successful techniques in robotic design allows for increased autonomous mobility, which leads to a greater productivity and production level.

Rapid Automation: Concepts, Methodologies,

Tools, and Applications provides innovative insights into the state-of-the-art technologies in the design and development of robotics and their real-world applications in business processes. Highlighting a range of topics such as workflow automation tools, human-computer interaction, and swarm robotics, this multi-volume book is ideally designed for computer engineers, business managers, robotic developers, business and IT professionals, academicians, and researchers.

Epidemiology Springer Science & Business Media
Ideal for graduate, MBA, and rigorous undergraduate programs, FINANCIAL ACCOUNTING: AN INTRODUCTION TO CONCEPTS, METHODS, AND USES 14e presents both the basic concepts underlying financial statements and the terminology and methods that allows the reader to interpret, analyze, and evaluate corporate financial statements. Fully

integrating the latest International Financial Reporting Standards, inclusive of the latest developments on Fair Value Accounting, and now more streamlined for busy students, this text provides the highest return on your financial accounting course investment. With great clarity, this widely respected financial accounting text paces students appropriately as they learn both the skills and applications of basic accounting in earlier chapters as well as the impart the concepts and analysis skills they will use as future business leaders. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Rapid Automation: Concepts, Methodologies, Tools, and Applications

World Scientific Publishing Company

Consumer interaction and engagement are vital components to help marketers maintain a lasting relationship with their customers.

To achieve this goal, companies must utilize current digital tools to create a strong online presence. **Digital Marketing and Consumer Engagement: Concepts, Methodologies, Tools, and Applications** is an innovative reference source for the latest academic material on emerging technologies, techniques, strategies, and theories in the promotion of brands through forms of digital media. Highlighting a range of topics, such as mobile commerce, brand communication, and social media, this multi-volume book is ideally designed for professionals, researchers, academics, students, managers, and practitioners actively involved in the marketing industry.

Intelligent Systems: Concepts, Methodologies, Tools, and Applications IGI Global

Environmental information and systems play a major role in environmental decision making. As such, it is vital to understand the impact that they have on different aspects of sustainable environmental management, as well as to understand the opportunism they might present for further improvement. **Environmental Information Systems: Concepts, Methodologies, Tools, and Applications** is an innovative reference source containing the latest research on the use of information systems to track and organize environmental data for use in an overall environmental management system. Highlighting a range of topics such as environmental analysis, remote sensing, and geographic information science, this multi-volume book is designed for engineers, data scientists, practitioners, academicians, and researchers interested in all aspects of environmental information systems. **Multiple Criteria and Multiple Constraint Levels Linear Programming** IGI Global

As modern technologies continue to develop and evolve, the ability of users to interface with new systems becomes a paramount concern.

Research into new ways for humans to make use of advanced computers and other such technologies is necessary to fully realize the potential of 21st century tools. *Human-Computer Interaction: Concepts, Methodologies, Tools, and Applications* gathers research on user interfaces for advanced technologies and how these interfaces can facilitate new developments in the fields of robotics, assistive technologies, and computational intelligence. This four-volume reference contains cutting-edge research for computer scientists; faculty and students of robotics, digital science, and networked communications; and clinicians invested in assistive technologies. This seminal reference

work includes chapters on topics pertaining to system usability, interactive design, mobile interfaces, virtual worlds, and more.

Digital Video Concepts, Methods, and Metrics IGI Global

Beyond the undergraduate and graduate levels, education has traditionally ceased when students enter the workforce as professionals in their respective fields. However, recent trends in education have found that adult students beyond the traditional university age often benefit greatly from returning to further their education. *Adult and Continuing Education: Concepts, Methodologies, Tools, and Applications* investigates some of the most promising trends in furthering education and professional development in a variety

of settings and industries. With an extensive array of chapters on topics ranging from non-traditional students to online and distance education for adult learners, this multi-volume reference book will provide students, educators, and industry professionals with the tools necessary to make the most of their return to the classroom.

Global Business Expansion: Concepts, Methodologies, Tools, and Applications Springer Science & Business Media

Since the 1990's, researchers, practitioners and public administrations have given more thought to urban logistics. However, their interests and goals are not the same, and several approaches do not produce efficient logistics systems as a result. This book aims to provide both a conceptual framework for urban logistics planning and management and

to create a basis for deploying solutions that aim to reduce the main nuisances related to urban goods.

The proposed book is divided in two parts. The first proposes a set of methodological chapters, written by key authors, which aim to support decision makers in their current choices related to urban logistics. In addition to public authorities' aims and goals, the book highlights the importance of private actors, and shows how supply chain management can deal with the problems of the last urban mile and its integration in global logistics chains. The second presents several applied research works that deal with current planning and practice issues in urban logistics, such as the role of city planning, the place of night deliveries in carrier organization, the limits of logistics pooling, and the real estate market, among others. The book was written by key authors, all having considerable research experience and recognised as experts in their respective fields. Each chapter presents methods and results of research works, written for a broad audience, and

more precisely directed to both academics and practitioners.

Mathematical Concepts and Methods in Modern Biology IGI Global

Note: This is the bound book only and does not include access to the Enhanced Pearson eText.

To order the Enhanced Pearson eText packaged with a bound book, use ISBN 0134300742.

Long considered the standard of excellence--the best introduction and guide to the practice of family therapy available--this accessible resource explores the rich history and contemporary practice of the entire field. Thorough, thoughtful, fair, and balanced, *Family Therapy* by Michael P. Nichols presents ideas and techniques that give readers a clear focus on clinical practice. While exploring the history, the classic schools, and the latest developments, this new edition puts an

increased, pragmatic focus on clinical practice, which includes discussions of the author's observations of actual sessions with leading practitioners, as well as the best case studies of several invited master therapists. Included are video links, interactive chapter quizzes, new case studies, a new section on the impact of the Affordable Care Act, and many more content changes that bring the reader up to date on the latest and most critical issues in the field of family therapy today. The Enhanced Pearson eText features embedded videos and assessments. Improve mastery and retention with the Enhanced Pearson eText* The Enhanced Pearson eText provides a rich, interactive learning environment designed to improve student mastery of content. The Enhanced Pearson eText is: Engaging. The new interactive, multimedia learning features were

developed by the authors and other subject-matter experts to deepen and enrich the learning experience. Convenient. Enjoy instant online access from your computer or download the Pearson eText App to read on or offline on your iPad® and Android® tablet. * Affordable. The Enhanced Pearson eText may be purchased stand-alone for 50-60% less than a print bound book. * The Enhanced eText features are only available in the Pearson eText format. They are not available in third-party eTexts or downloads. *The Pearson eText App is available on Google Play and in the App Store. It requires Android OS 3.1-4, a 7" or 10" tablet, or iPad iOS 5.0 or later.

Research Methods: Concepts, Methodologies, Tools, and Applications IGI Global

There are a myriad of mathematical problems that cannot be solved using traditional methods. The development of fuzzy expert systems has provided

new opportunities for problem-solving amidst uncertainties. *Fuzzy Systems: Concepts, Methodologies, Tools, and Applications* is a comprehensive reference source on the latest scholarly research and developments in fuzzy rule-based methods and examines both theoretical foundations and real-world utilization of these logic sets. Featuring a range of extensive coverage across innovative topics, such as fuzzy logic, rule-based systems, and fuzzy analysis, this is an essential publication for scientists, doctors, engineers, physicians, and researchers interested in emerging perspectives and uses of fuzzy systems in various sectors.

Sustainable Urban Logistics: Concepts, Methods and Information Systems Apress

Due to the growing use of web applications and communication devices, the use of data has increased throughout various industries, including business and healthcare. It is

necessary to develop specific software programs that can analyze and interpret large amounts of data quickly in order to ensure adequate usage and predictive results. Cognitive Analytics: Concepts, Methodologies, Tools, and Applications provides emerging perspectives on the theoretical and practical aspects of data analysis tools and techniques. It also examines the incorporation of pattern management as well as decision-making and prediction processes through the use of data management and analysis. Highlighting a range of topics such as natural language processing, big data, and pattern recognition, this multi-volume book is ideally designed for information technology professionals, software developers, data analysts, graduate-

level students, researchers, computer engineers, software engineers, IT specialists, and academicians.

Durable Ideas in Software Engineering: Concepts, Methods and Approaches from My Virtual Toolbox

Durable Ideas in Software Engineering: Concepts, Methods and Approaches from My Virtual Toolbox
At head of title: Airport Cooperative Research Program.

Image Processing: Concepts, Methodologies, Tools, and Applications CRC Press

As businesses seek to compete on a global stage, they must be constantly aware of pressures from all levels: regional, local, and worldwide. The organizations that can best build advantages in diverse environments achieve the greatest success. Global Business Expansion: Concepts, Methodologies, Tools, and Applications is a comprehensive reference

source for the latest scholarly material on the emergence of new ideas and opportunities in various markets and provides organizational leaders with the tools they need to be successful. Highlighting a range of pertinent topics such as market entry strategies, transnational organizations, and competitive advantage, this multi-volume book is ideally designed for researchers, scholars, business executives and professionals, and graduate-level business students.