

Determining The Optimal Number Of Clusters With The

Effectively avoiding, recognizing, and managing complications is integral to your operative success. Let a multidisciplinary team of experts in otolaryngology, plastic surgery, oral and maxillofacial surgery, and general surgery guide you through the full range of complications associated with every type of head and neck procedure . . . so you will be equipped to produce the most favorable outcomes for even the most challenging cases! Expert, comprehensive, multidisciplinary coverage of head and neck complications helps you to safely incorporate new surgical techniques into your practice. An emphasis on complication prevention and recognition assists you in avoiding the "complication cascade." Coverage of both acute and long-term care of patients with head and neck complications prepares you to make effective choices in both instances. A new "Quality of Life" section examines the controversies that often surround selecting one procedure over another, illuminating why certain procedures aren't always best for some patients. A new section on complications of facial plastic and reconstructive surgery equips you to perform these techniques with greater

confidence. A consistent, practical chapter format helps you focus on key clinical and surgical considerations. A new, more cohesive full-color illustration program richly captures visual nuances of clinical presentation and operative technique. A bonus CD-ROM allows you to use all of the images from the book in electronic presentations.

Artificial intelligence is a constantly advancing field that requires models in order to accurately create functional systems. The use of natural acumen to create artificial intelligence creates a field of research in which the natural and the artificial meet in a new and innovative way. *Critical Developments and Applications of Swarm Intelligence* is a critical academic publication that examines developing research, technologies, and function regarding natural and artificial acumen specifically, in regards to self-organized systems. Featuring coverage on a broad range of topics such as evolutionary algorithms, optimization techniques, and computational comparison, this book is geared toward academicians, students, researchers, and engineers seeking relevant and current research on the progressive research based on the implementation of swarm intelligence in self-organized systems.

This book is primarily a symptom-based guide to Breast and Gynecologic Imaging. Most clinical publications focus on a specific pathology such as

"Imaging and/or management of ovarian cancer," but in clinical practice, patients do not present with a diagnosis. Physicians are presented with clinical symptoms, and appropriate use of imaging after a clinical assessment is critical from the point of view of effective intervention to treat a patient. CMS now mandates a clinical decision support system to justify imaging. This is based on making use of appropriate modalities for specific clinical problems that are deemed so by professional society guidelines. In an era of emphasis on cost effective, high quality health care delivery, it is critical for clinicians in training and practice to have a resource that outlines scientifically sound and professional society endorsed criteria for appropriate work up of patients' symptoms. This book applies this symptom-based approach to women's health. Authors are focused on providing a scientifically proven resource to gynecologists, obstetricians, radiologists and internists involved in the management of common symptoms affecting women. Each chapter is based on a common breast or gynecological problem and how patients are triaged for imaging. The implications of the findings and the most appropriate management of the patient are also presented. The text focuses on providing the most effective methods currently available to investigate commonly encountered symptoms in women's health. In addition, there are chapters that outline rationale of screening for breast cancer in women with an

average risk and those with an elevated risk for breast cancer as well as a clinician guide to understanding multidisciplinary approach to the Breast cancer patient. This is an ideal guide for gynecologists, obstetricians, radiologists, and internists working in women's health.

This second edition emphasizes the environmental impact on reproduction, with updated chapters throughout as well as complete new chapters on species such as sharks and rays. This is a wide-ranging book that will be of relevance to anyone involved in species conservation, and provides critical perspectives on the real utility of current and emerging reproductive sciences. Understanding reproductive biology is centrally important to the way many of the world's conservation problems should be tackled. Currently the extinction problem is huge, with up to 30% of the world's fauna being expected to disappear in the next 50 years. Nevertheless, it has been estimated that the global population of animals in zoos encompasses 12,000 – 15,000 species, and we anticipate that every effort will be made to preserve these species for as long as possible, minimizing inbreeding effects and providing the best welfare standards available. Even if the reproductive biology community cannot solve the global biodiversity crisis for all wild species, we should do our best to maintain important captive populations. Reproductive biology in this context is much more than the

development of techniques for helping with too little or too much breeding. While some of the relevant techniques are useful for individual species that society might target for a variety of reasons, whether nationalistic, cultural or practical, technical developments have to be backed up by thorough biological understanding of the background behind the problems.

Contains the proceedings of the nineteenth biennial European Conference on Artificial Intelligence (ECAI), which since 1974 has been Europe's principal opportunity for researchers to present and hear about the very best contemporary AI research in all its diverse forms and applications.

Systems designers have learned that many agents co-operating within the system can solve very complex problems with a minimal design effort. In general, multi-agent systems that use swarm intelligence are said to be swarm intelligent systems. Today, these are mostly used as search engines and optimization tools. This volume reviews innovative methodologies of swarm intelligence, outlines the foundations of engineering swarm intelligent systems and applications, and relates experiences using the particle swarm optimisation.

A comprehensive overview of current developments and applications in biofuels production Process Systems Engineering for Biofuels Development brings together the latest and most cutting-edge research on the production of biofuels. As the first book

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specifically devoted to process systems engineering for the production of biofuels, Process Systems Engineering for Biofuels Development covers theoretical, computational and experimental issues in biofuels process engineering. Written for researchers and postgraduate students working on biomass conversion and sustainable process design, as well as industrial practitioners and engineers involved in process design, modeling and optimization, this book is an indispensable guide to the newest developments in areas including: Enzyme-catalyzed biodiesel production Process analysis of biodiesel production (including kinetic modeling, simulation and optimization) The use of ultrasonification in biodiesel production Thermochemical processes for biomass transformation to biofuels Production of alternative biofuels In addition to the comprehensive overview of the subject of biofuels found in the Introduction of the book, the authors of various chapters have provided extensive discussions of the production and separation of biofuels via novel applications and techniques.

Genetic Algorithms in Java Basics is a brief introduction to solving problems using genetic algorithms, with working projects and solutions written in the Java programming language. This brief book will guide you step-by-step through various implementations of genetic algorithms and some of their common applications, with the aim to give you a practical understanding allowing you to solve your own unique, individual problems. After reading this book you will be comfortable with the language specific issues and

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concepts involved with genetic algorithms and you'll have everything you need to start building your own. Genetic algorithms are frequently used to solve highly complex real world problems and with this book you too can harness their problem solving capabilities. Understanding how to utilize and implement genetic algorithms is an essential tool in any respected software developers toolkit. So step into this intriguing topic and learn how you too can improve your software with genetic algorithms, and see real Java code at work which you can develop further for your own projects and research. Guides you through the theory behind genetic algorithms Explains how genetic algorithms can be used for software developers trying to solve a range of problems Provides a step-by-step guide to implementing genetic algorithms in Java Lists citations with abstracts for aerospace related reports obtained from world wide sources and announces documents that have recently been entered into the NASA Scientific and Technical Information Database.

The articles presented in this Special Issue cover different aspects of the urban planning process, such as simulation, optimization or decision-making. The authors highlighted the importance of performing an integrated design of the district, considering different sectors, different energy vectors and different operation modes. In order to better integrate renewable and residual energy sources (R²ES), careful design of systems and storage solutions should be performed. Different storage solutions were tested, ranging from large-scale thermal energy storage to vehicle batteries or the

thermal mass of buildings. Van der Heijde et al. (2019) proposed a two-layer design optimization algorithm to design a district heating network with solar thermal collectors, seasonal thermal energy storage and excess heat injection. Pajot et al. (2019) also performed an optimization of the sizing and control of energy systems in a district equipped with heat pumps, with thermal energy storage or thermal mass utilization. A hybrid distribution system, coupling the thermal and electrical networks, was proposed by Widl et al. (2019). Arnaudo et al. (2019) used the vehicle-to-grid (V2G) concept to decrease the overloading of the electrical distribution network during heat pump operation. Finally, Kazmi et al. (2019) proposed an integrated decision-making planning approach for a better integration of R²ES in the distribution network. The complexity of urban planning leads to the development of new tools and methodologies. Until now, operation was poorly integrated in the design phase. New urban building energy modeling tools were proposed by the different authors. These tools are either based on co-simulations or integrated solutions to be able to capture the fine dynamics of a district. The difficulty of generating the input data for the models was also discussed. Regarding the methodology, most articles proposed a two-stage optimization procedure to optimize both the operational and design aspects. Mixed-integer linear programming (MILP) and genetic algorithms were often used to find optimal solutions. This book constitutes the refereed proceedings of the International Symposium on Security in Computing and Communications, SSCC 2015, held in Kochi, India, in

August 2015. The 36 revised full papers presented together with 13 short papers were carefully reviewed and selected from 157 submissions. The papers are organized in topical sections on security in cloud computing; authentication and access control systems; cryptography and steganography; system and network security; application security.

Optimization methodologies are fundamental instruments to tackle the complexity of today's engineering processes. Engineering Optimization 2014 is dedicated to optimization methods in engineering, and contains the papers presented at the 4th International Conference on Engineering Optimization (ENGOPT2014, Lisbon, Portugal, 8-11 September 2014). The book will be of interest to engineers, applied mathematicians, and computer scientists working on research, development and practical applications of optimization methods in engineering.

Consider the problem of a robot (algorithm, learning mechanism) moving along the real line attempting to locate a particular point ? . To assist the mechanism, we assume that it can communicate with an Environment ("Oracle") which guides it with information regarding the direction in which it should go. If the Environment is deterministic the problem is the "Deterministic Point - cation Problem" which has been studied rather thoroughly [1]. In its pioneering version [1] the problem was presented in the setting that the Environment could charge the robot a cost

which was proportional to the distance it was from the point sought for. The question of having multiple communicating robots locate a point on the line has also been studied [1, 2]. In the stochastic version of this problem, we consider the scenario when the learning mechanism attempts to locate a point in an interval with stochastic (i. e. , possibly erroneous) instead of deterministic responses from the environment. Thus when it should really be moving to the “right” it may be advised to move to the “left” and vice versa. Apart from the problem being of importance in its own right, the stochastic pointlocationproblemalsohas potentialapplications insolvingoptimization problems.

Inmanyoptimizationsolutions—for example in image processing, pattern recognition and neural computing [5, 9, 11, 12, 14, 16, 19], the algorithm works its way from its current solution to the optimal solution based on information that it currently has. A crucial question is one of determining the parameter which the optimization algorithm should use.

Developments in the areas of biology and bioinformatics are continuously evolving and creating a plethora of data that needs to be analyzed and decrypted. Since it can be difficult to decipher the multitudes of data within these areas, new computational techniques and tools are being employed to assist researchers in their findings. The Handbook of Research on Computational

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Intelligence Applications in Bioinformatics examines emergent research in handling real-world problems through the application of various computation technologies and techniques. Featuring theoretical concepts and best practices in the areas of computational intelligence, artificial intelligence, big data, and bio-inspired computing, this publication is a critical reference source for graduate students, professionals, academics, and researchers.

The Routledge Companion to Strategic Marketing offers the latest insights into marketing strategy. Bodo Schlegelmilch and Russ Winer present 29 specially commissioned chapters, which include up-to-date thinking on a diverse range of marketing strategy topics. Readers benefit from the latest strategic insights of leading experts from universities around the world. Contributing authors are from, among others, the U.S. (Berkeley, Cornell, MIT, New York University, Texas A&M), Europe (the Hanken School of Economics, INSEAD, the University of Oxford, the University of Groningen, WU Vienna) and Asia (the Indian School of Business, Tongji University). The topics addressed include economic foundations of marketing strategy, competition in digital marketing strategy (e.g. mobile payment systems and social media strategy), marketing strategy, and corporate social responsibility, as well as perspectives on capturing the impact of marketing strategy. Collectively, this authoritative guide is an accessible tool for

researchers, students, and practitioners.

Salt marshes are highly dynamic and important ecosystems that dampen impacts of coastal storms and are an integral part of tidal wetland systems, which sequester half of all global marine carbon. They are now being threatened due to sea-level rise, decreased sediment influx, and human encroachment. This book provides a comprehensive review of the latest salt marsh science, investigating their functions and how they are responding to stresses through formation of salt pannes and pools, headward erosion of tidal creeks, marsh-edge erosion, ice-fracturing, and ice-rafted sedimentation. Written by experts in marsh ecology, coastal geomorphology, wetland biology, estuarine hydrodynamics, and coastal sedimentation, it provides a multidisciplinary summary of recent advancements in our knowledge of salt marshes. The future of wetlands and potential deterioration of salt marshes is also considered, providing a go-to reference for graduate students and researchers studying these coastal systems, as well as marsh managers and restoration scientists.

This three-volume proceedings contains revised selected papers from the Second International Conference on Artificial Intelligence and Computational Intelligence, AICI 2011, held in Taiyuan, China, in September 2011. The total of 265 high-quality papers presented were carefully reviewed and selected from

1073 submissions. The topics of Part II covered are: heuristic searching methods; immune computation; information security; information theory; intelligent control; intelligent image processing; intelligent information fusion; intelligent information retrieval; intelligent signal processing; knowledge representation; and machine learning.

Competition may not function well where technology calls for large and complex investments, as in the electricity industry where public utilities often provide service. This book presents economic welfare foundations for the purpose of evaluating how well, from a social point of view, an enterprise performs when competition is unable to function. Problems with existing institutions are emphasized. Topics treated include welfare measures and their uses in peak-load pricing, second-best pricing, and income distribution. Professor Sherman covers public choice difficulties of government intervention, and describes problems with incentives in statutory monopolies and efforts to overcome them through the study of principal-agent relationships. Contestability and sustainable prices are also discussed, as well as effects of uncertainty and imperfect information.

This volume contains the proceedings of the Fifth International Conference on Database Systems for Advanced Applications (DASFAA '97). DASFAA '97 focused on

advanced database technologies and their applications. The 55 papers in this volume cover a wide range of areas in the field of database systems and applications ? including the rapidly emerging areas of the Internet, multimedia, and document database systems ? and should be of great interest to all database system researchers and developers, and practitioners.

Microeconomics is the most engaging introductory economics resource available to students today. Using real businesses examples to show how managers use economics to make real decisions every day, the subject is made relevant and meaningful. Each chapter of the text opens with a case study featuring a real business or real business situation, refers to the study throughout the chapter, and concludes with An Inside Look—a news article format which illustrates how a key principle covered in the chapter relates to real business situations or was used by a real company to make a real business decision. Solved problems in every chapter motivate learners to confidently connect with the theory to solve economic problems and analyse current economic events.

Digital Twin Driven Smart Design draws on the latest industry practice and research to establish a basis for the implementation of digital twin technology in product design. Coverage of relevant design theory and methodology is followed by detailed discussions of key enabling technologies that are supported by cutting-edge case studies of implementation. This groundbreaking book explores how digital twin

technology can bring improvements to different kinds of product design process, including functional, lean and green. Drawing on the work of researchers at the forefront of this technology, this book is the ideal guide for anyone interested in digital manufacturing or computer-aided design.

Safety of Sea Transportation is the second of two Conference Proceedings of TransNav 2017, June 21-23 in Gdynia, Poland. Safety of Sea Transportation will focus on the following themes: Sustainability, intermodal and multimodal transportation Safety and hydrodynamic study of hydrotechnical structures Bunkering and fuel consumption Gases emission, water pollution and environmental protection Occupational accidents Supply chain of blocks and spare parts Electrotechnical problems Ships stability and loading strength Cargo loading and port operations Maritime Education and Training (MET) Human factor, crew manning and seafarers problems Economic analysis Mathematical models, methods and algorithms Fishery Legal aspects Aviation Computer Aided Design of Multivariable Technological Systems covers the proceedings of the Second International Federation of Automatic Control (IFAC). The book reviews papers that discuss topics about the use of Computer Aided Design (CAD) in designing multivariable system, such as theoretical issues, applications, and implementations. The book tackles several topics relevant to the use of CAD in designing multivariable systems. Topics include quasi-classical approach to multivariable feedback system designs; fuzzy control for multivariable systems; root loci with multiple gain parameters;

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multivariable frequency domain stability criteria; and computational algorithms for pole assignment in linear multivariable systems. The text will be of great use to professionals whose work involves designing and implementing multivariable systems.

Conjoint analysis is probably the most significant development in marketing research in the past few decades. It can be described as a set of techniques ideally suited to studying customers' decision-making processes and determining tradeoffs. Though this book is oriented towards methods and applications of conjoint analysis in marketing, conjoint methods are also applicable for other business and social sciences. After an introduction to the basic ideas of conjoint analysis the book describes the steps involved in designing a ratings-based conjoint study, it covers various methods for estimating partworth functions from preference ratings data, and dedicates a chapter on methods of design and analysis of conjoint-based choice experiments, where choice is measured directly. Chapter 5 describes several methods for handling a large number of attributes. Chapters 6 through 8 discuss the use of conjoint analysis for specific applications like product and service design or product line decisions, product positioning and market segmentation decisions, and pricing decisions. Chapter 9 collates miscellaneous applications of marketing mix including marketing resource allocation or store location decisions. Finally, Chapter 10 reviews more recent developments in experimental design and data analysis and presents an assessment of future developments.

Naval Research Logistics Quarterly
The Regulation of Monopoly
Cambridge University Press

The mathematical models of productivity theory allows for the productivity rate of manufacturing machines and systems to be modelled with results that are validated by their actual output. This book presents the analytical approaches and methods to define maximal productivity rate of manufacturing machines and systems, based on the parameters of technological processes, structural design, reliability of mechanisms, and management systems.

Mineral resource estimation has changed considerably in the past 25 years: geostatistical techniques have become commonplace and continue to evolve; computational horsepower has revolutionized all facets of numerical modeling; mining and processing operations are often larger; and uncertainty quantification is becoming standard practice. Recent books focus on historical methods or details of geostatistical theory. So there is a growing need to collect and synthesize the practice of modern mineral resource estimation into a book for undergraduate students, beginning graduate students, and young geologists and engineers. It is especially fruitful that this book is written by authors with years of relevant experience performing mineral resource estimation and with years of relevant teaching experience. This comprehensive textbook and reference fills

this need.

Up-to-date, comprehensive coverage of the Oracle database and business intelligence tools Written by a team of Oracle insiders, this authoritative book provides you with the most current coverage of the Oracle data warehousing platform as well as the full suite of business intelligence tools. You'll learn how to leverage Oracle features and how those features can be used to provide solutions to a variety of needs and demands. Plus, you'll get valuable tips and insight based on the authors' real-world experiences and their own implementations. Avoid many common pitfalls while learning best practices for:

- Leveraging Oracle technologies to design, build, and manage data warehouses
- Integrating specific database and business intelligence solutions from other vendors
- Using the new suite of Oracle business intelligence tools to analyze data for marketing, sales, and more
- Handling typical data warehouse performance challenges
- Uncovering initiatives by your business community, security business sponsorship, project staffing, and managing risk

By illustrating how effective managers apply economic theory and techniques to solve real-world problems, **MANAGERIAL ECONOMICS 13E** helps future business leaders learn to think analytically and make better decisions. As always, the seasoned author team balances a solid foundation of traditional

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microeconomic theory with extensive exploration of the latest analytical tools in managerial economics, such as game-theoretic tactics, information economics, and organizational architecture. This new edition is concise, comprehensive, and current with cutting-edge coverage of important management topics relevant to today's students, including an exciting focus on green business and environmentally friendly practices and products. Available with InfoTrac Student Collections <http://gocengage.com/infotrac>. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

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