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KEY=ARENA - SWEENEY ANIYAH

SIMULATION MODELING AND ARENA

John Wiley & Sons Emphasizes a hands-on approach to learning statistical analysis and model building through the use of comprehensive examples, problems sets, and software applications With a unique blend of theory and applications, *Simulation Modeling and Arena*®, Second Edition integrates coverage of statistical analysis and model building to emphasize the importance of both topics in simulation. Featuring introductory coverage on how simulation works and why it matters, the Second Edition expands coverage on static simulation and the applications of spreadsheets to perform simulation. The new edition also introduces the use of the open source statistical package, R, for both performing statistical testing and fitting distributions. In addition, the models are presented in a clear and precise pseudo-code form, which aids in understanding and model communication. *Simulation Modeling and Arena, Second Edition* also features: Updated coverage of necessary statistical modeling concepts such as confidence interval construction, hypothesis testing, and parameter estimation Additional examples of the simulation clock within discrete event simulation modeling involving the mechanics of time advancement by hand simulation A guide to the Arena Run Controller, which features a debugging scenario New homework problems that cover a wider range of engineering applications in transportation, logistics, healthcare, and computer science A related website with an Instructor's Solutions Manual, PowerPoint® slides, test bank questions, and data sets for each chapter *Simulation Modeling and Arena, Second Edition* is an ideal textbook for upper-undergraduate and graduate courses in modeling and simulation within statistics, mathematics, industrial and civil engineering, construction management, business, computer science, and other departments where simulation is practiced. The book is also an excellent reference for professionals interested in mathematical modeling, simulation, and Arena.

SIMULATION MODELING AND ANALYSIS WITH ARENA

Elsevier *Simulation Modeling and Analysis with Arena* is a highly readable textbook which treats the essentials of the Monte Carlo discrete-event simulation methodology, and does so in the context of a popular Arena simulation environment. It treats simulation modeling as an in-vitro laboratory that facilitates the understanding of complex systems and experimentation with what-if scenarios in order to estimate their performance metrics. The book contains chapters on the simulation modeling methodology and the underpinnings of discrete-event systems, as well as the relevant underlying probability, statistics, stochastic processes, input analysis, model validation and output analysis. All simulation-related concepts are illustrated in numerous Arena examples, encompassing production lines, manufacturing and inventory systems, transportation systems, and computer information systems in networked settings. · Introduces the concept of discrete event Monte Carlo simulation, the most commonly used methodology for modeling and analysis of complex systems · Covers essential workings of the popular animated simulation language, ARENA, including set-up, design parameters, input data, and output analysis, along with a wide variety of sample model applications from production lines to transportation systems · Reviews elements of statistics, probability, and stochastic processes relevant to simulation modeling * Ample end-of-chapter problems and full Solutions Manual * Includes CD with sample ARENA modeling programs

SIMULATION WITH ARENA

This fourth edition of *Simulation with Arena* has the same goal as the first three editions: to provide a comprehensive treatment of simulation concepts in general and the Arena simulation software in particular. It starts by having the reader develop simple, well-animated, high-level models, and then progresses to advanced modeling and analysis. Statistical design and analysis of simulation experiments is integrated with the modeling chapters, reflecting the joint nature of these activities in good simulation studies. The objective is to help the reader carry out effective simulation modeling, analysis, and projects using the Arena simulation system. An informal, tutorial writing style is used to aid the beginner in fully understanding the ideas and topics presented. Included is a CD containing the current version of the Arena academic software and the examples referenced throughout the text. Starting with an introduction to simulation concepts, the book progresses through an overview of the Arena software, basic model development, input analysis, additional modeling constructs, output analysis, and advanced modeling. It also includes chapters on integrating Arena simulation models with other applications, specialized statistical issues, continuous simulation, and conducting a successful simulation study. It is intended primarily to be a text in a first course on simulation or for self-study. However, the later chapters could be incorporated into an advanced or graduate-level course. Building on the success of the first three editions, published in 1998, 2002, and 2004, this edition retains the basic outline and tutorial style, built around a sequence of successively more complicated examples. All the examples and discussion, however, have been modified and updated to be consistent with the current version of the Arena software, and additional examples have been developed, along with more exercises. As before, a password-protected website for instructors provides support in terms of downloadable lecture slides and solutions to end-of-chapter exercises. The book draws heavily on the experience and expertise of the authors, a professor at the University of Cincinnati specializing in simulation, and two seasoned members of Rockwell Software (formerly Systems Modeling), the developers of Arena, who are active in product design and development, training, consulting, and applications.

SIMULATION MODELING AND ARENA

John Wiley & Sons Traditionally, there have been two primary types of simulation textbooks: those that emphasize the theoretical (and mostly statistical) aspects of simulation, and those that emphasize the simulation language or package. *Simulation Modeling and Arena, Second Edition* blends these two aspects of simulation textbooks together while adding and emphasizing the art of model building. This book features coverage of statistical analysis, which is integrated with the modeling to emphasize the importance of both topics. The Second Edition features new topical coverage, including static simulation and spreadsheet simulation; how simulation works and why it matters; and expanded use of Arena, specifically the use of strings in models, the Attribute module, the OnChange block, visual dashboards, and an introduction to 3-D animation concepts. In addition, a running example is presented throughout each chapter to prepare readers to perform a realistic case study based on the IIE/RA contest problem. The new edition also contains expanded topical coverage on: simulation clock within discrete event modeling simulation; statistical modeling concepts with the theoretical basis and equations needed to perform the analysis by hand; increased use of Arena Run Controller, modeling non-stationary arrival processes; and the Wait-Signal constructs.

INTRODUCTION TO DISCRETE EVENT SIMULATION AND AGENT-BASED MODELING

VOTING SYSTEMS, HEALTH CARE, MILITARY, AND MANUFACTURING

Springer Science & Business Media Discrete event simulation and agent-based modeling are increasingly recognized as critical for diagnosing and solving process issues in complex systems. *Introduction to Discrete Event Simulation and Agent-based Modeling* covers the techniques needed for success in all phases of simulation projects. These include: • Definition – The reader will learn how to plan a project and communicate using a charter. • Input analysis – The reader will discover how to determine defensible sample sizes for all needed data collections. They will also learn how to fit distributions to that data. • Simulation – The reader will understand how simulation controllers work, the Monte Carlo (MC) theory behind them, modern verification and validation, and ways to speed up simulation using variation reduction techniques and other methods. • Output analysis – The reader will be able to establish simultaneous intervals on key responses and apply selection and ranking, design of experiments (DOE), and black box optimization to develop defensible improvement recommendations. • Decision support – Methods to inspire creative alternatives are presented, including lean production. Also, over one hundred solved problems are provided and two full case studies, including one on voting machines that received international attention. *Introduction to Discrete Event Simulation and Agent-based Modeling* demonstrates how simulation can facilitate improvements on the job and in local communities. It allows readers to competently apply technology considered key in many industries and branches of government. It is suitable for undergraduate and graduate students, as well as researchers and other professionals.

MODELING AND SIMULATION OF DISCRETE EVENT SYSTEMS

John Wiley & Sons Computer modeling and simulation (M&S) allows engineers to study and analyze complex systems. Discrete-event system (DES)-M&S is used in modern management, industrial engineering, computer science, and the military. As computer speeds and memory capacity increase, so DES-M&S tools become more powerful and more widely used in solving real-life problems. Based on over 20 years of evolution within a classroom environment, as well as on decades-long experience in developing simulation-based solutions for high-tech industries, *Modeling and Simulation of Discrete-Event Systems* is the only book on DES-M&S in which all the major DES modeling formalisms – activity-based, process-oriented, state-based, and event-based – are covered in a unified manner: A well-defined procedure for building a formal model in the form of event graph, ACD, or state graph Diverse types of modeling templates and examples that can be used as building blocks for a complex, real-life model A systematic, easy-to-follow procedure combined with sample C# codes for developing simulators in various modeling formalisms Simple tutorials as well as sample model files for using popular off-the-shelf simulators such as SIGMA®, ACE®, and Arena® Up-to-date research results as well as research issues and directions in DES-M&S *Modeling and Simulation of Discrete-Event Systems* is an ideal textbook for undergraduate and graduate students of simulation/industrial engineering and computer science, as well as for simulation practitioners and researchers.

AGENT-BASED BUSINESS PROCESS SIMULATION

A PRIMER WITH APPLICATIONS AND EXAMPLES

Springer Nature This book provides a conceptual clarification of the interconnections between agent-based modeling and business process management (BPM) and presents practical examples of agent-based models dealing with BPM and simulation in NetLogo. The book is structured in three parts. Part I starts with the motivation for the work and introduces the general structure of the book. Next, chapter 2 provides a brief introduction to main BPM concepts including the business process lifecycle, which describes the analysis of an organization by means of modeling and simulation, business process performance indicators, and the automatic extraction of information from event data. Chapter 3 then offers a summary of the concept of agent and the studies concerning agent-based approaches that involve business process analysis and management studies. Part II of the book introduces in chapter 4 the NetLogo tool adopted throughout the remaining book. After that, chapter 5 focuses on agent-oriented modeling as a problem domain analysis and design approach for creating decision-support systems based on agent-based simulations. Chapter 6 further describes the topic of agent-based modeling and simulation for business process analysis. The final part III starts with chapter 7 that reviews some BPM applications by introducing programs enabling to manage models represented in standard formats, such as BPMN, Petri nets, and the eXtensible Event Stream standard language. Subsequently, chapter 8 describes a number of case studies from different areas, and eventually, chapter

9 introduces some examples of advanced topics of process mining and agent-based simulation with process discovery, conformance checking, and agent-based applications utilizing Petri nets. The book is primarily written for researchers and advanced graduate and PhD students who look for an introduction to the fruitful exploitation of agent-based modeling to business process management. The book is also useful for industry practitioners who are interested in supporting their business decisions with computational simulations. The book is complemented by a dedicated web site with lots of additional details and models in NetLogo for further evaluation by the reader.

FUTURE MANUFACTURING SYSTEMS

BoD – Books on Demand This book is a collection of articles aimed at finding new ways of manufacturing systems developments. The articles included in this volume comprise of current and new directions of manufacturing systems which I believe can lead to the development of more comprehensive and efficient future manufacturing systems. People from diverse background like academia, industry, research and others can take advantage of this volume and can shape future directions of manufacturing systems.

OPERATIONS RESEARCH METHODOLOGIES

CRC Press A single source guide to operations research (OR) techniques, this book covers emerging OR methodologies in a clear, concise, and unified manner. Building a bridge between theory and practice, it begins with coverage of fundamental models and methods such as linear, nonlinear, integer, and dynamic programming, networks, simulation, queuing, inventory, stochastic processes, and decision analysis. The book then explores emerging techniques including multiple criteria optimization, meta heuristics, robust optimization, and complexity and large scale networks. Each chapter gives an overview of a particular methodology, illustrates successful applications, and provides references to computer software availability.

OPERATIONS RESEARCH AND MANAGEMENT SCIENCE HANDBOOK

CRC Press Operations Research (OR) began as an interdisciplinary activity to solve complex military problems during World War II. Utilizing principles from mathematics, engineering, business, computer science, economics, and statistics, OR has developed into a full fledged academic discipline with practical application in business, industry, government and military. Currently regarded as a body of established mathematical models and methods essential to solving complicated management issues, OR provides quantitative analysis of problems from which managers can make objective decisions. Operations Research and Management Science (OR/MS) methodologies continue to flourish in numerous decision making fields. Featuring a mix of international authors, Operations Research and Management Science Handbook combines OR/MS models, methods, and applications into one comprehensive, yet concise volume. The first resource to reach for when confronting OR/MS difficulties, this text – Provides a single source guide in OR/MS Bridges theory and practice Covers all topics relevant to OR/MS Offers a quick reference guide for students, researchers and practitioners Contains unified and up-to-date coverage designed and edited with non-experts in mind Discusses software availability for all OR/MS techniques Includes contributions from a mix of domestic and international experts The 26 chapters in the handbook are divided into two parts. Part I contains 14 chapters that cover the fundamental OR/MS models and methods. Each chapter gives an overview of a particular OR/MS model, its solution methods and illustrates successful applications. Part II of the handbook contains 11 chapters discussing the OR/MS applications in specific areas. They include airlines, e-commerce, energy systems, finance, military, production systems, project management, quality control, reliability, supply chain management and water resources. Part II ends with a chapter on the future of OR/MS applications.

SERVICEOLOGY FOR SERVICES

SELECTED PAPERS OF THE 1ST INTERNATIONAL CONFERENCE OF SERVICEOLOGY

Springer Services are key activities in the globalization of the economy and also underlie the quality of life of local residents. The advanced work presented in this book was selected from the proceedings of the First International Conference on Serviceology (ICServ2013), held October 16–18, 2013 in Tokyo. This book provides a useful overall guide to the state of the art in theory and practice of services for researchers in various fields, including engineering, marketing, economics, and others. This work also facilitates the scientific systematization of services and promotes technological developments for solutions of industrial issues.

INTRODUCTION TO MATRIX ANALYTIC METHODS IN QUEUES 1

ANALYTICAL AND SIMULATION APPROACH - BASICS

John Wiley & Sons Matrix-analytic methods (MAM) were introduced by Professor Marcel Neuts and have been applied to a variety of stochastic models since. In order to provide a clear and deep understanding of MAM while showing their power, this book presents MAM concepts and explains the results using a number of worked-out examples. This book's approach will inform and kindle the interest of researchers attracted to this fertile field. To allow readers to practice and gain experience in the algorithmic and computational procedures of MAM, Introduction to Matrix Analytic Methods in Queues 1 provides a number of computational exercises. It also incorporates simulation as another tool for studying complex stochastic models, especially when the state space of the underlying stochastic models under analytic study grows exponentially. The book's detailed approach will make it more accessible for readers interested in learning about MAM in stochastic models.

HUB EXCHANGE OPERATIONS IN INTERMODAL HUB-AND-SPOKE OPERATIONS

COMPARISON OF THE PERFORMANCES OF FOUR TYPES OF RAIL-RAIL EXCHANGE FACILITIES

IOS Press GATEWAY TO ENGINEERING, 2E helps students build a solid foundation in technological literacy as they study engineering-related careers and educational pathways. This book introduces middle school students to the process of design, the importance of engineering graphics, and applications of electricity and electronics, mechanics, energy, communications, automation/robotics, manufacturing processes, and control systems/computer programming. The vibrant four-color design and plentiful images make it especially appealing to middle school students, while the text's strong engineering flavor and alignment with national Standards for Technological Literacy make it the perfect tool for mastering Project Lead the Way's® Gateway to Technology curriculum. It also includes a revised chapter featuring sustainable architecture, enhanced coverage of green technology, and new CourseMate interactive learning tools.

XIV MEDITERRANEAN CONFERENCE ON MEDICAL AND BIOLOGICAL ENGINEERING AND COMPUTING 2016

MEDICON 2016, MARCH 31ST-APRIL 2ND 2016, PAPHOS, CYPRUS

Springer This volume presents the proceedings of Medicon 2016, held in Paphos, Cyprus. Medicon 2016 is the XIV in the series of regional meetings of the International Federation of Medical and Biological Engineering (IFMBE) in the Mediterranean. The goal of Medicon 2016 is to provide updated information on the state of the art on Medical and Biological Engineering and Computing under the main theme "Systems Medicine for the Delivery of Better Healthcare Services". Medical and Biological Engineering and Computing cover complementary disciplines that hold great promise for the advancement of research and development in complex medical and biological systems. Research and development in these areas are impacting the science and technology by advancing fundamental concepts in translational medicine, by helping us understand human physiology and function at multiple levels, by improving tools and techniques for the detection, prevention and treatment of disease. Medicon 2016 provides a common platform for the cross fertilization of ideas, and to help shape knowledge and scientific achievements by bridging complementary disciplines into an interactive and attractive forum under the special theme of the conference that is Systems Medicine for the Delivery of Better Healthcare Services. The programme consists of some 290 invited and submitted papers on new developments around the Conference theme, presented in 3 plenary sessions, 29 parallel scientific sessions and 12 special sessions.

COMPUTER SIMULATION USING EXCEL WITHOUT PROGRAMMING

Universal-Publishers Defining Simulation in its broadest aspect as embodying a certain model to represent the behavior of a system, whether that may be an economic or an engineering one, with which conducting experiments is attainable. Such a technique enables the management

INTERACTIVE MODELING AND SIMULATION IN BUSINESS SYSTEM DESIGN

Springer This classroom-texted textbook/reference presents a set of useful modeling techniques, describing how these can be combined into a powerful framework for the analysis and design of business systems. These techniques follow an interactive modeling and simulation (IMS) approach, enabling the modeling and simulation of separate parts of the system at different levels of abstraction, and the composition of these parts in a flexible crosscutting manner that preserves the behavior of the individual parts. Topics and features: presents a detailed introduction to the foundations of IMS for business system design, covering protocol modeling and goal modeling semantics; describes the practical application of IMS for business system design, illustrated by a selection of useful case studies; highlights the advantages of this approach to IMS for business system design, with a focus on performance management, motivation modeling, and communication; includes review questions and exercises at the end of each chapter.

MULTI-AGENT SYSTEMS FOR HEALTHCARE SIMULATION AND MODELING: APPLICATIONS FOR SYSTEM IMPROVEMENT

APPLICATIONS FOR SYSTEM IMPROVEMENT

IGI Global "This book provides theoretical frameworks and the latest empirical research findings used by medical professionals in the implementation of multi-agent systems"--Provided by publisher.

EVOLUTION OF COGNITIVE NETWORKS AND SELF-ADAPTIVE COMMUNICATION SYSTEMS

IGI Global Cognitive networks can be crucial for the evolution of future communication systems; however, current trends have indicated major movement in other relevant fields towards the integration of different techniques for the realization of self-aware and self-adaptive communication systems. Evolution of Cognitive Networks and Self-Adaptive Communication Systems overviews innovative technologies combined for the formation of self-aware, self-adaptive, and self-organizing networks. By aiming to inform the research community and the related industry of solutions for cognitive networks, this book is essential for researchers, instructors, and professionals interested in clarifying the latest trends resulting in a unified realization for cognitive networking and communication systems.

MODELING HUMAN AND ORGANIZATIONAL BEHAVIOR

APPLICATION TO MILITARY SIMULATIONS

National Academies Press Simulations are widely used in the military for training personnel, analyzing proposed equipment, and rehearsing missions, and these simulations need realistic models of human behavior. This book draws together a wide variety of theoretical and applied research in human behavior modeling that can be considered for use in those simulations. It covers behavior at the individual, unit, and command level. At the individual soldier level, the topics covered include attention, learning, memory, decisionmaking, perception, situation awareness, and planning. At the unit level, the focus is on command and control. The book provides short-, medium-, and long-term goals for research and development of more realistic models of human behavior.

INTRODUCTION TO MODELING IN PHYSIOLOGY AND MEDICINE

Elsevier This unified modeling textbook for students of biomedical engineering provides a complete course text on the foundations, theory and practice of modeling and simulation in physiology and medicine. It is dedicated to the needs of biomedical engineering and clinical students, supported by applied BME applications and examples. Developed for biomedical engineering and related courses: speaks to BME students at a level and in a language appropriate to their needs, with an interdisciplinary clinical/engineering approach, quantitative basis, and many applied examples to enhance learning. Delivers a quantitative approach to modeling and also covers simulation: the perfect foundation text for studies across BME and medicine. Extensive case studies and engineering applications from BME, plus end-of-chapter exercises.

SIMULATION FOR DESIGNING CLINICAL TRIALS

A PHARMACOKINETIC-PHARMACODYNAMIC MODELING PERSPECTIVE

CRC Press Providing more than just a comprehensive history, critical vocabulary, insightful compilation of motivations, and clear explanation of the state-of-the-art of modern clinical trial simulation, this book supplies a rigorous framework for employing simulation as an experiment, according to a predefined simulation plan, that reflects good simulation practice.

USING LANDSCAPE SIMULATION MODELS TO HELP BALANCE CONFLICTING GOALS IN CHANGING FORESTS

Frontiers Media SA

ROUTE CHOICE MODELLING AND RUNTIME OPTIMISATION FOR SIMULATION OF BUILDING EVACUATION

Forschungszentrum Jülich

INFORMATION TECHNOLOGIES, METHODS, AND TECHNIQUES OF SUPPLY CHAIN MANAGEMENT

IGI Global "This book has compiled chapters from experts from around the world in the field of supply chain management and provides a vital compendium of the latest research, case studies, frameworks, methodologies, architectures, and best practices within the field of supply chain management"--Provided by publisher.

AN INTRODUCTION TO MANAGEMENT SCIENCE: QUANTITATIVE APPROACHES TO DECISION MAKING

Cengage Learning Reflecting the latest developments in Microsoft Office Excel 2013, Anderson/Sweeney/Williams/Camm/Cochran/Fry/Ohlmann's AN INTRODUCTION TO MANAGEMENT SCIENCE: QUANTITATIVE APPROACHES TO DECISION MAKING, 14E equips readers with a sound conceptual understanding of the role that management science plays in the decision-making process. The trusted market leader for more than two decades, the book uses a proven problem-scenario approach to introduce each quantitative technique within an applications setting. All data sets, applications, and screen visuals reflect the details of Excel 2013 to effectively prepare you to work with the latest spreadsheet tools. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

SYSTEMS MODELING AND COMPUTER SIMULATION

Routledge This second edition describes the fundamentals of modelling and simulation of continuous-time, discrete time, discrete-event and large-scale systems. Coverage new to this edition includes: a chapter on non-linear systems analysis and modelling, complementing the treatment of continuous-time and discrete-time systems and a chapter on the computer animation and visualization of dynamical systems motion.

PROCESS PLANNING OPTIMIZATION IN RECONFIGURABLE MANUFACTURING SYSTEMS

Universal-Publishers To date, reconfigurable manufacturing systems (RMSs) are among the most effective manufacturing styles that can offer manufacturers an alternative way of facing up to the challenges of continual changes in production requirements within the global, competitive and dynamic manufacturing environments. However, availability of optimal process plans that are suitable for reconfigurable manufacturing is one of the key enablers - yet to be fully unlocked - for realizing the full benefits of true RMSs. To unlock the process planning key and advance the state of art of reconfigurable manufacturing in the manufacturing industry, a number of questions need to be answered: (i) what decision making models and (ii) what computational techniques, can be applied to provide optimal manufacturing process planning solutions that are suitable for logical reconfiguration in manufacturing systems? To answer these questions, you must understand how to model reconfigurable manufacturing activities in an optimization perspective. You must also understand how to develop and select appropriate optimization techniques for solving process planning problems in manufacturing systems. To this end, Process Planning Optimization in Reconfigurable Manufacturing Systems covers: the design and operation of RMSs, optimal process planning modelling for reconfigurable manufacturing and the design and implementation of heuristic algorithm design techniques. The author explores how to: model optimization problems, select suitable optimization techniques, develop optimization algorithms, comparatively analyze the performance of candidate metaheuristics and how to investigate the effects of optimal process planning solutions on operating levels in manufacturing systems. This book delineates five alternative heuristic algorithm design techniques based on simulated annealing, genetic algorithms and the boltzmann machine that are tasked to solve manufacturing process planning optimization problems in RMSs. After reading this book, you will understand: how a reconfigurable manufacturing system works, the different types of manufacturing optimization problems associated with reconfigurable manufacturing, as well as the conventional and intelligent techniques that are suitable for solving process planning optimization problems. You will also be able to develop and implement effective optimization procedures and algorithms for a wide spectrum of optimization problems in design and reconfigurable manufacturing."

SWARM INTELLIGENCE FOR ELECTRIC AND ELECTRONIC ENGINEERING

IGI Global With growing developments in artificial intelligence and focus on swarm behaviors; algorithms have been utilized in solving a variety of problems in the field of engineering. This approach has been specifically suited to face the challenges in electric and electronic engineering. Swarm Intelligence for Electric and Electronic Engineering provides an exchange of knowledge on the advances, discoveries, and improvements of swarm intelligence in electric and electronic engineering. This comprehensive collection aims to bring together new swarm-based algorithms as well as approaches to complex problems and various real-world applications.

ROBOTICS, AUTOMATION, AND CONTROL IN INDUSTRIAL AND SERVICE SETTINGS

IGI Global

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HANDBOOK OF RESEARCH ON INTERDISCIPLINARY APPROACHES TO DECISION MAKING FOR SUSTAINABLE SUPPLY CHAINS

IGI Global Businesses must create initiatives and adopt eco-friendly practices in order to adhere to the sustainability goals of a globalized world. Recycling, product service systems, and green manufacturing are just a few methods businesses use within a sustainable supply chain. However, these tools and techniques must also ensure business growth in order to remain relevant in an environmentally-conscious world. The Handbook of Research on Interdisciplinary Approaches to Decision Making for Sustainable Supply Chains provides interdisciplinary approaches to sustainable supply chain management through the optimization of system performance and development of new policies, design networks, and effective reverse logistics practices. Featuring research on topics such as industrial symbiosis, green collaboration, and clean transportation, this book is ideally designed for policymakers, business executives, warehouse managers, operations managers, suppliers, industry professionals, sustainability developers, decision makers, students, academicians, practitioners, and researchers seeking current research on reducing the environmental impacts of businesses via sustainable supply chain planning.

LOOSE LEAF FOR SIMULATION WITH ARENA

McGraw-Hill Science/Engineering/Math Simulation with Arena provides a comprehensive treatment of simulation using industry-standard Arena software. The text starts by having the reader develop simple high-level models, and then progresses to advanced modeling and analysis. Statistical design and analysis of simulation experiments is integrated with the modeling chapters, reflecting the importance of mathematical modeling of these activities. An informal, tutorial writing style is used to aid the beginner in fully understanding the ideas and topics presented. The academic version of Arena and example files are available through the book's website. McGraw-Hill is proud to offer Connect with the sixth edition of Kelton's, Simulation with Arena. This innovative and powerful system helps your students learn more efficiently and gives you the ability to customize your homework problems simply and easily. Track individual student performance - by question, assignment, or in relation to the class overall with detailed grade reports. ConnectPlus provides students with all the advantages of Connect, plus 24/7 access to an eBook. Kelton's Simulation with Arena, sixth edition, includes the power of McGraw-Hill's LearnSmart--a proven adaptive learning system that helps students learn faster, study more efficiently, and retain more knowledge through a series of adaptive questions. This innovative study tool pinpoints concepts the student does not understand and maps out a personalized plan for success.

COMPUTER SIMULATION

BoD – Books on Demand The first chapter provides an overview of the development of a novel agent-based simulation model of socio-environmental innovation diffusion. The second chapter shows the study about rendering of colours with three rendering engines. The third and fourth chapters are devoted to modelling clothes at different levels. The fifth chapter describes the modelling of computer simulation in the optimization of bioprocess technology. Chapters 6 and 7 formulate a physical model of deformation of steel and idea of constructing a scientific workshop focused on high-temperature processes. Chapter 8 formulates surrogate models. Chapter 9 shows computer simulation of high-frequency electromagnetic fields. Chapter 10 proposes the modelling of the task allocation problem by the use of Petri Nets. Chapter 11 presents various scenarios whose ranking is done according to defined criteria and weight coefficients.

PRINCIPLES, METHODOLOGIES, AND SERVICE-ORIENTED APPROACHES FOR CLOUD COMPUTING

IGI Global Innovations in cloud and service-oriented architectures continue to attract attention by offering interesting opportunities for research in scientific communities. Although advancements such as computational power, storage, networking, and infrastructure have aided in making major progress in the implementation and realization of cloud-based systems, there are still significant concerns that need to be taken into account. Principles, Methodologies, and Service-Oriented Approaches for Cloud Computing aims to present insight into Cloud principles, examine associated methods and technologies, and investigate the use of service-oriented computing technologies. In addressing supporting infrastructure of the Cloud, including associated challenges and pressing issues, this reference source aims to present researchers, engineers, and IT professionals with various approaches in Cloud computing.

ENTERPRISE AND ORGANIZATIONAL MODELING AND SIMULATION

7TH INTERNATIONAL WORKSHOP, EOMAS 2011, HELD AT CAISE 2011, LONDON, UK, JUNE 20-21, 2011, SELECTED PAPERS

Springer This book constitutes the post conference proceedings of the 7th International Workshop on Enterprise and Organizational Modeling and Simulation, EOMAS 2011, held in conjunction with CAISE 2011 in London, UK, in June 2011. Enterprises are purposefully designed systems used to fulfill certain functions. An extended enterprise and organizational study involves both analysis and design activities, in which modeling and simulation play prominent roles. The related techniques and methods are effective, efficient, economic, and widely used in enterprise engineering, organizational study, and business process management. The 14 contributions in this volume were carefully reviewed and selected from 29 submissions, and they explore these topics, address the underlying challenges, find and improve on solutions, and demonstrate the application of modeling and simulation in the domains of enterprises, their organizations and underlying business processes.

MILLER'S ANESTHESIA, 2-VOLUME SET E-BOOK

Elsevier Health Sciences Covering everything from historical and international perspectives to basic science and current clinical practice, Miller's Anesthesia, 9th Edition, remains the preeminent reference in the field. Dr. Michael Gropper leads a team of global experts who bring you the most up-to-date information available on the technical, scientific, and clinical issues you face each day - whether you're preparing for the boards, studying for recertification, or managing a challenging patient care situation in your practice. Includes four new chapters: Clinical Care in Extreme Environments: High Pressure, Immersion, and Hypo- and Hyperthermia; Immediate and Long-Term Complications; Clinical Research; and Interpreting the Medical Literature. Addresses timely topics such as neurotoxicity, palliation, and sleep/wake disorders. Streamlines several topics into single chapters with fresh perspectives from new authors, making the material more readable and actionable. Features the knowledge and expertise of former lead editor Dr. Ronald Miller, as well as new editor Dr. Kate Leslie of the University of Melbourne and Royal Melbourne Hospital. Provides state-of-the-art coverage of anesthetic drugs, guidelines for anesthetic practice and patient safety, new techniques, step-by-step instructions for patient management, the unique needs of pediatric patients, and much more - all highlighted by more than 1,500 full-color illustrations for enhanced visual clarity.

DECISION MAKING IN SERVICE INDUSTRIES

A PRACTICAL APPROACH

CRC Press In real-life scenarios, service management involves complex decision-making processes usually affected by random or stochastic variables. Under such uncertain conditions, the development and use of robust and flexible strategies, algorithms, and methods can provide the quantitative information necessary to make better business decisions. Decision Making in Service Industries: A Practical Approach explores the challenges that must be faced to provide intelligent strategies for efficient management and decision making that will increase your organization's competitiveness and profitability. The book provides insight and understanding into practical and methodological issues related to decision-making processes under uncertainty in service industries. It examines current and future trends regarding how these decision-making processes can be efficiently performed for better design of service systems by using probabilistic algorithms as well as hybrid and simulation-based approaches. Traditionally, many quantitative tools have been developed to make decisions in production companies. This book explores how to use these tools for making decisions inside service industries. Thus, the authors tackle strategic, tactical, and operational problems in service companies with the help of suitable quantitative models such as heuristic and metaheuristic algorithms, simulation, or queuing theory. Generally speaking, decision making is a hard task in business fields. Making the issue more complex, most service companies' problems are related to the uncertainty of the service demand. This book sheds light on these types of decision problems. It provides studies that demonstrate the suitability of quantitative methods to make the right decisions. Consequently, this book presents the business analytics needed to make strategic decisions in service industries.

INTRODUCTION TO TRANSPORTATION ANALYSIS, MODELING AND SIMULATION

COMPUTATIONAL FOUNDATIONS AND MULTIMODAL APPLICATIONS

Springer This comprehensive textbook/reference provides an in-depth overview of the key aspects of transportation analysis, with an emphasis on modeling real transportation systems and executing the models. Topics and features: presents comprehensive review questions at the end of each chapter, together with detailed case studies, useful links, references and suggestions for further reading; supplies a variety of teaching support materials at the book's webpage on Springer.com, including a complete set of lecture slides; examines the classification of models used for multimodal transportation systems, and reviews the models and evaluation methods used in transportation planning; explains traffic assignment to road networks, and describes computer simulation integration platforms and their use in the transportation systems sector; provides an overview of transportation simulation tools, and discusses the critical issues in the design, development and use of the simulation models.

BUILDING PERFORMANCE SIMULATION FOR DESIGN AND OPERATION

Routledge Effective building performance simulation can reduce the environmental impact of the built environment, improve indoor quality and productivity, and facilitate future innovation and technological progress in construction. It draws on many disciplines, including physics, mathematics, material science, biophysics and human behavioural, environmental and computational sciences. The discipline itself is continuously evolving and maturing, and improvements in model robustness and fidelity are constantly being made. This has sparked a new agenda focusing on the effectiveness of simulation in building life-cycle processes. Building Performance Simulation for Design and Operation begins with an introduction to the concepts of performance indicators and targets, followed by a discussion on the role of building simulation in performance-based building design and operation. This sets the ground for in-depth discussion of performance prediction for energy demand, indoor environmental quality (including thermal, visual, indoor air quality and moisture phenomena), HVAC and renewable system performance, urban level modelling, building operational optimization and automation. Produced in cooperation with the International Building Performance Simulation Association (IBPSA), and featuring contributions from fourteen internationally recognised experts in this field, this book provides a unique and comprehensive overview of building performance simulation for the complete building life-cycle from conception to demolition. It is primarily intended for advanced students in building services engineering, and in architectural, environmental or mechanical engineering; and will be useful for building and systems designers and operators.

MICROECONOMETRICS

METHODS AND APPLICATIONS

Cambridge University Press This book provides the most comprehensive treatment to date of microeconomics, the analysis of individual-level data on the economic behavior of individuals or firms using regression methods for cross section and panel data. The book is oriented to the practitioner. A basic understanding of the linear regression model with matrix algebra is assumed. The text can be used for a microeconomics course, typically a second-year economics PhD course; for data-oriented applied microeconomics field courses; and as a reference work for graduate students and applied researchers who wish to fill in gaps in their toolkit. Distinguishing features of the book include emphasis on nonlinear models and robust inference, simulation-based estimation, and problems of complex survey data. The book makes frequent use of numerical examples based on generated data to illustrate the key models and methods. More substantially, it systematically integrates into the text empirical illustrations based on seven large and exceptionally rich data sets.

INFORMATION CONTROL PROBLEMS IN MANUFACTURING 2006

A PROCEEDINGS VOLUME FROM THE 12TH IFAC INTERNATIONAL SYMPOSIUM, ST ETIENNE, FRANCE, 17-19 MAY 2006

Elsevier Information Control Problems in Manufacturing 2006 contains the Proceedings of the 12th IFAC Symposium on Information Control Problems in Manufacturing (INCOM'2006). This symposium took place in Saint Etienne, France, on May 17-19 2006. INCOM is a tri-annual event of symposia series organized by IFAC and it is promoted by the IFAC Technical Committee on Manufacturing Plant Control. The purpose of the symposium INCOM'2006 was to offer a forum to present the state-of-the-art in international research and development work, with special emphasis on the applications of optimisation methods, automation and IT technologies in the control of manufacturing plants and the entire supply chain within the enterprise. The symposium stressed the scientific challenges and issues, covering the whole product and processes life cycle, from the design through the manufacturing and maintenance, to the distribution and service. INCOM'2006 Technical Program also included a special event on Innovative Engineering Techniques in Healthcare Delivery. The application of engineering and IT methods in medicine is a rapidly growing field with many opportunities for innovation. The Proceedings are composed of 3 volumes: Volume 1 - Information Systems, Control & Interoperability Volume 2 - Industrial Engineering Volume 3 - Operational Research * 3-volume set, containing 362 carefully reviewed and selected papers * presenting the state-of-the-art in international research and development in Information Control problems in Manufacturing