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### M2A0CS - MARSHALL SHEPARD

In this book, theory of large scale optimization is introduced with case studies of real-world problems and applications of structured mathematical modeling. The large scale optimization methods are represented by various theories such as Benders' decomposition, logic-based Benders' decomposition, Lagrangian relaxation, Dantzig-Wolfe decomposition, multi-tree decomposition, Van Roy' cross decomposition and parallel decomposition for mathematical programs such as mixed integer nonlinear programming and stochastic programming. Case studies of large scale optimization in supply chain management, smart manufacturing, and Industry 4.0 are investigated with efficient implementation for real-time solutions. The features of case studies cover a wide range of fields including the Internet of things, advanced transportation systems, energy management, supply chain networks, service systems, operations management, risk management, and financial and sales management. Instructors, graduate students, researchers, and practitioners, would benefit from this book finding the applicability of large scale optimization in asynchronous parallel optimization, real-time distributed network, and optimizing the knowledge-based expert system for convex and non-convex problems.

Focuses entirely on demystifying the field and subject of ICME and provides step-by-step guidance on its industrial application via case studies This highly-anticipated follow-up to Mark F. Horstemeyer's pedagogical book on Integrated Computational Materials Engineering (ICME) concepts includes engineering practice case studies related to the analysis, design, and use of structural metal alloys. A welcome supplement to the first book—which includes the theory and methods required for teaching the subject in the classroom—Integrated Computational Materials Engineering (ICME) For Metals: Concepts and Case Studies focuses on engineering applications that have occurred in industries demonstrating the ICME methodologies, and aims to catalyze industrial diffusion of ICME technologies throughout the world. The recent confluence of smaller desktop computers with enhanced computing power coupled with the emergence of physically-based material models has created the clear trend for modeling and simulation in product design, which helped create a need to integrate more knowledge into materials processing and product performance. Integrated Computational Materials Engineering (ICME) For Metals: Case Studies educates those seeking that knowledge with chapters covering: Body Centered Cubic Materials; Designing An Interatomic Potential For Fe-C Alloys; Phase-Field Crystal Modeling; Simulating Dislocation Plasticity in BCC Metals by Integrating Fundamental Concepts with Macroscale Models; Steel Powder Metal Modeling; Hexagonal Close Packed Materials; Multiscale Modeling of Pure Nickel; Predicting Constitutive Equations for Materials Design; and more. Presents case studies that connect modeling and simulation for different materials' processing methods for metal alloys Demonstrates several practical engineering problems to encourage industry to employ ICME ideas Introduces a new simulation-based design paradigm Provides web access to microstructure-sensitive models and experimental database Integrated Computational Materials Engineering (ICME) For Metals: Case Studies is a must-have book for researchers and industry professionals aiming to comprehend and employ ICME in the design and development of new materials.

This book introduces a generic and systematic design-time/run-time methodology for handling the dynamic nature of modern embedded systems, without adding large safety margins in the design. The techniques introduced can be utilized on top of most existing static mapping methodologies to deal effectively with dynamism and to increase drastically their efficiency. This methodology is based on the concept of system scenarios, which group system behaviors that are similar from a multi-dimensional cost perspective, such as resource requirements, delay, and energy consumption. Readers will be enabled to design systems capable to adapt to current inputs, improving system quality and/or reducing cost, possibly learning on-the-fly during execution. Provides an effective solution to deal with dynamic system design Includes a broad survey of the state-of-the-art approaches in this domain Enables readers to design for substantial cost improvements (e.g. energy reductions), by exploiting system scenarios Demonstrates how the methodology has been applied effectively on various, real design problems in the embedded system context

This book presents a crisis scenario generator with black swans, black butterflies and worst case scenarios. It is the most useful scenario generator that can be used to manage assets in a crisis-prone period, offering more reliable values for Value at Risk (VaR), Conditional Value at Risk (CVaR) and Tail Value at Risk (TVaR). Hazardous Forecasts and Crisis Scenario Generator questions how to manage assets when crisis probability increases, enabling you to adopt a process for using generators in order to be well prepared for handling crises. Evaluates risk-oriented philosophy, forecast risk-oriented philosophy and its processes Features scenario-building processes, with an emphasis on main and extreme scenarios Discusses asset management processes using a generator methodology to avoid risk understatement and increase optimization.

Motion Simulation and Mechanism Design with SolidWorks Motion 2011 is written to help you become familiar with SolidWorks Motion, an add-on module of the SolidWorks software family. This book covers the basic concepts and frequently used commands required to advance readers from a novice to intermediate level in using SolidWorks Motion. SolidWorks Motion allows you to use solid models created in SolidWorks to simulate and visualize mechanism motion and performance. Using SolidWorks Motion early in the product development stage could prevent costly redesign due to design defects found in the physical testing phase. Therefore, using SolidWorks Motion contributes to a more cost effective, reliable, and efficient product design process. Basic concepts discussed in this book include model generation, such as creating assembly mates for proper motion; carrying out simulation and animation; and visualizing simulation results, such as graphs and spreadsheet data. These concepts are introduced using simple, yet realistic examples. Verifying the results obtained from the computer simulation is extremely important. One of the unique features of this book is the incorporation of theoretical discussions for kinematic and dynamic analyses in conjunction with the simulation results obtained using SolidWorks Motion. Veri-

fyng the simulation results will increase your confidence in using the software and prevent you from being fooled by erroneous simulations.

Reshape your world with computer telephony The existing telephone infrastructure is quickly being replaced with products, systems, and solutions based on off-the-shelf computer technology. Michael Bayer's Computer Telephony Demystified gives you everything you need to take advantage of customizable telephony technology. Perfect for everyone from call center managers, network planners, and CIOs, to telecom engineers, this is the one-stop, plain-English tutorial and reference book on this hot topic. You'll find concept-clarifying illustrations and plenty of answers and insights into this key technology area, including: A complete framework for designing and evaluating products, services, and solutions based on all relevant CT standards specifications A thorough explanation of CTI and how to implement and extend call processing functionality Coverage of media services technologies including Text-to-Speech (TTS) and Automatic Speech Recognition (ASR) Integrated explanations of both traditional and next-generation switching fabric technology such as IP telephony Real-world scenarios that demonstrate how CT technology can improve business and day-to-day life Scenario-Based e-Learning Scenario-Based e-Learning offers a new instructional design approach that can accelerate expertise, build critical thinking skills, and promote transfer of learning. This book focuses on the what, when, and how of scenario-based e-learning for workforce learning. Throughout the book, Clark defines and demystifies scenario-based e-learning by offering a practical design model illustrated with examples from veterinary science, automotive troubleshooting, sales and loan analysis among other industries. Filled with helpful guidelines and a wealth of illustrative screen shots, this book offers you the information needed to: Identify the benefits of a SBeL design for learners and learning outcomes Determine when SBeL might be appropriate for your needs Identify specific outcomes of SBeL relevant to common organizational goals Classify specific instructional goals into one or more learning domains Apply a design model to present content in a task-centered context Evaluate outcomes from SBeL lessons Identify tacit expert knowledge using cognitive task analysis techniques Make a business case for SBeL in your organization Praise for Scenario-Based e-Learning "Clark has done it again—with her uncanny ability to make complex ideas accessible to practitioners, the guidelines in this book provide an important resource for you to build your own online, problem-centered instructional strategies." —M. David Merrill, professor emeritus at Utah State University; author, First Principles of Instruction "Clark's wonderful book provides a solid explanation of the how, what, and why of scenario-based e-learning. The tools, techniques, and resources in this book provide a roadmap for creating engaging, informative scenarios that lead to tangible, measurable learning outcomes. If you want to design more engaging e-learning, you need to read this book." —Karl M. Kapp, Professor of Instructional Technology, Bloomsburg University; author, The Gamification of Learning and Instruction

Case-based reasoning is a methodology with a long tradition in artificial intelligence that brings together reasoning and machine learning techniques to solve problems based on past experiences or cases. Given a problem to be solved, reasoning involves the use of methods to retrieve similar past cases in order to reuse their solution for the problem at hand. Once the problem has been solved, learning methods can be applied to improve the knowledge based on past experiences. In spite of being a broad methodology applied in industry and services, case-based reasoning has often been forgotten in both artificial intelligence and machine learning books. The aim of this book is to present a concise introduction to case-based reasoning providing the essential building blocks for the designing of case-based reasoning systems, as well as to bring together the main research lines in this field to encourage future students to solve current CBR challenges.

The Chinese government set a target to reduce China's carbon intensity by 40%-45% in 2020 at its 2005 level. To achieve this target, the government has allocated targets to provinces, cities, and large enterprises, and selected five pilot provinces and eight cities for CO2 emission trading. Such emission trading process will involve decentralization, optimization, and negotiation. The prime objective of this book is to perform academic research on simulating the negotiation process. Through this research, a methodological framework and its implementation are set up to analyze, model and facilitate the process of negotiation among central government and individual energy producers under environmental, economical and social constraints. Negotiation In Decentralization: Case Study Of China's Carbon Trading In The Power Sector discusses research carried out on negotiation issues in China regarding Chinese power sector reform over the past 30 years. Results show that conflicts exist between power groups and the national government, and that the most current negotiation topics in China's power industry are demand and supply management, capital investment, energy prices, and CO2 emission mitigations. Negotiation In Decentralization: Case Study Of China's Carbon Trading In The Power Sector is written for government policy makers, energy and environment industry investors, energy program and project managers, environment conservation specialists, university professors, researchers, and graduate students. It aims to provide a methodology and a tool that can resolve difficult negotiation issues and change a loss-loss situation to a win-win situation for key players in a decentralized system, including government policymakers, energy producers, and environment conservationists.

Advancements in the field of information technology have transformed the way businesses interact with each other and their customers. Businesses now require customized products and services to reflect their constantly changing environment, yet this results in cutting-edge products with relatively short lifecycles. Innovative Solutions for Implementing Global Supply Chains in Emerging Markets addresses the roles of knowledge management and information technology within emerging markets. This forward-thinking title explores the current trends in supply chain management, knowledge acquisition and transfer mechanisms among supply chain partners, and knowledge management paradigms. This book is an invaluable resource for researchers, business professionals and students, business analysts, and marketing professionals.

This book explores various challenging problems and applications areas of wireless sensor networks (WSNs), and identifies the current issues and fu-

ture research challenges. Discussing the latest developments and advances, it covers all aspects of in WSNs, from architecture to protocols design, and from algorithm development to synchronization issues. As such the book is an essential reference resource for undergraduate and postgraduate students as well as scholars and academics working in the field.

This book demonstrates what the discipline of economics has to offer as support for analyzing cooperation on management of trans-boundary water resources. It also considers what the discipline of economics has to acquire to become a more effective contributor to trans-boundary water resource management given political, legal, social, physical, scientific, and ecological realities. This book has its genesis in a symposium of the International Water and Resource Economics Consortium held at Annapolis, Maryland, April 13-16, 1997. The symposium was organized by the editors and the book contains papers presented at the symposium with subsequent revisions. The symposium brought together both economists and agency management personnel for the purpose of discussing not only how economic tools apply to trans-boundary water management, but also of identifying the obstacles to making such tools useful and informative to politicians and negotiators in public decision making roles. INTERNATIONAL VERSUS DOMESTIC TRANS-BOUNDARY PROBLEMS Trans-boundary water problems arise in many dimensions. The two most important types of problems emphasized in this book are international and domestic interstate or interregional problems. Cooperation on international problems is especially difficult because enforcement must be voluntary given the sovereignty of nations and the absence of an effective legal enforcement mechanism. Agreements must be sustainable and self-enforced if they are to have lasting benefits. Every negotiating country must be convinced it will receive benefits before it gives its consent to cooperation. In the absence of enforceable agreements, trans-boundary (i. e.

This book constitutes the refereed proceedings of the 22nd Annual German Conference on Artificial Intelligence, KI-98, held in Bremen, Germany, in September 1998. The 16 revised full papers presented were carefully reviewed and selected for inclusion in the proceedings. Also included are three invited papers and abstracts of two invited talks, as well as an appendix containing up-to-date descriptions of German AI projects. Thus the volume gives a unique overview of AI research in Germany.

This book constitutes the proceedings of the 8th International Heinz Nixdorf Symposium, IHNS 2010, held in Paderborn, Germany, April 21-22, 2010, under the title "Changing Paradigms: Advanced Manufacturing and Sustainable Logistics". The 27 full and two short papers presented in this book were carefully reviewed and selected from a total of 63 submissions. They are grouped in five parts on Supply Chain Management, Production Logistics and Industrial Engineering, Operations Research Techniques, Humanitarian Logistics, and Simulation. The presentation is completed by nine invited keynote papers from renowned international experts in these fields.

The 7th International Workshop on Fuzzy Logic and Applications, held in Camogli, Italy in July 2007, presented the latest findings in the field. This volume features the refereed proceedings from that meeting. It includes 84 full papers as well as three keynote speeches. The papers are organized into topical sections covering fuzzy set theory, fuzzy information access and retrieval, fuzzy machine learning, and fuzzy architectures and systems.

This book proposes a uniform logic and probabilistic (LP) approach to risk estimation and analysis in engineering and economics. It covers the methodological and theoretical basis of risk management at the design, test, and operation stages of economic, banking, and engineering systems with groups of incompatible events (GIE). This edition includes new chapters providing a detailed treatment of scenario logic and probabilistic models for revealing bribes. It also contains clear definitions and notations, revised sections and chapters, an extended list of references, and a new subject index, as well as more than a hundred illustrations and tables which motivate the presentation.

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.

This book constitutes the refereed proceedings of the 9th Asia-Pacific Network Operations and Management Symposium, APNOMS 2006. The book presents 50 revised full papers and 25 revised short papers, organized in topical sections on management of ad hoc and sensor networks, network measurements and monitoring, mobility management, QoS management, management architectures and models, security management, E2E QoS and application management, management experience, NGN management, and IP-based network management.

Petroleum and natural gas still remain the single biggest resource for energy on earth. Even as alternative and renewable sources are developed, petroleum and natural gas continue to be, by far, the most used and, if engineered properly, the most cost-effective and efficient, source of energy on the planet. Drilling engineering is one of the most important links in the energy chain, being, after all, the science of getting the resources out of the ground for processing. Without drilling engineering, there would be no gasoline, jet fuel, and the myriad of other "have to have" products that people use all over the world every day. Following up on their previous books, also available from Wiley-Scrivener, the authors, two of the most well-respected, prolific, and progressive drilling engineers in the industry, offer this groundbreaking volume. They cover the basics tenets of drilling engineering, the most common problems that the drilling engineer faces day to day, and cutting-edge new technology and processes through their unique lens. Written to reflect the new, changing world that we live in, this fascinating new volume offers a treasure of knowledge for the veteran engineer, new hire, or student. This book is an excellent resource for petroleum engineering students, reservoir engineers, supervisors & managers, researchers and environmental engineers for planning every aspect of rig operations in the most sustainable, environmentally responsible manner, using the most up-to-date technological advancements in equipment and processes.

The Special Issue on Advances in Modeling and Management of Urban Water Networks (UWNs) explores four important topics of research in the context of UWNs: asset management, modeling of demand and hydraulics, energy recovery, and pipe burst identification and leakage reduction. In the first topic, the multi-objective optimization of interventions on the network is presented to find trade-off solutions between costs and efficiency. In the second topic, methodologies are presented to simulate and predict demand and to simulate network behavior in emergency scenarios. In the third topic, a methodology is presented for the multi-objective optimization of pump-as-turbine (PAT) installation sites in transmission mains. In the fourth topic, methodologies for pipe burst identification and leakage reduction are presented. As for the urban drainage systems (UDSs), the two explored

topics are asset management, with a system upgrade to reduce flooding, and modeling of flow and water quality, with analyses on the transition from surface to pressurized flow, impact of water use reduction on the operation of UDSs, and sediment transport in pressurized pipes. The Special Issue also includes one paper dealing with the hydraulic modeling of an urban river with a complex cross-section.

Master the practical aspects of the CFA Program Curriculum with expert instruction for the 2017 exam The same official curricula that CFA Program candidates receive with program registration is now publicly available for purchase. CFA Program Curriculum 2017 Level II, Volumes 1-6 provides the complete Level II Curriculum for the 2017 exam, with practical instruction on the Candidate Body of Knowledge (CBOK) and how it is applied, including expert guidance on incorporating concepts into practice. Level II focuses on complex analysis with an emphasis on asset valuation, and is designed to help you use investment concepts appropriately in situations analysts commonly face. Coverage includes ethical and professional standards, quantitative analysis, economics, financial reporting and analysis, corporate finance, equities, fixed income, derivatives, alternative investments, and portfolio management organized into individual study sessions with clearly defined Learning Outcome Statements. Charts, graphs, figures, diagrams, and financial statements illustrate complex concepts to facilitate retention, and practice questions with answers allow you to gauge your understanding while reinforcing important concepts. While Level I introduced you to basic foundational investment skills, Level II requires more complex techniques and a strong grasp of valuation methods. This set dives deep into practical application, explaining complex topics to help you understand and retain critical concepts and processes. Incorporate analysis skills into case evaluations Master complex calculations and quantitative techniques Understand the international standards used for valuation and analysis Gauge your skills and understanding against each Learning Outcome Statement CFA Institute promotes the highest standards of ethics, education, and professional excellence among investment professionals. The CFA Program Curriculum guides you through the breadth of knowledge required to uphold these standards. The three levels of the program build on each other. Level I provides foundational knowledge and teaches the use of investment tools; Level II focuses on application of concepts and analysis, particularly in the valuation of assets; and Level III builds toward synthesis across topics with an emphasis on portfolio management.

The first encyclopedia in the field, the International Encyclopedia of Ergonomics and Human Factors provides a comprehensive and authoritative compendium of current knowledge on ergonomics and human factors. It gives specific information on concepts and tools unique to ergonomics. About 500 entries, published in three volumes and on CD-ROM, are pre

Motivated by practical optimization problems occurring in energy systems with regenerative energy supply, Debora Mahlke formulates and analyzes multistage stochastic mixed-integer models. For their solution, the author proposes a novel decomposition approach which relies on the concept of splitting the underlying scenario tree into subtrees. Based on the formulated models from energy production, the algorithm is computationally investigated and the numerical results are discussed.

SUCCEEDING IN BUSINESS WITH MICROSOFT OFFICE EXCEL 2013 prepares your students to solve business problems by moving beyond the basic point and click skills to think critically about realistic business situations. When students combine software analysis with their own decision making abilities, they are more likely meet any business challenge with success. The Succeeding in Business Series emphasizes problem-solving, critical thinking, and analysis - challenging students to find efficient and effective solutions. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Blend the art of innovation with the rigor of engineering Great technology alone is rarely sufficient to ensure a product's success. Scenario-Focused Engineering is a customer-centric, iterative approach used to design and deliver the seamless experiences and emotional engagement customers demand in new products. In this book, you'll discover the proven practices and lessons learned from real-world implementations of this approach, including why delight matters, what it means to be customer-focused, and how to iterate effectively using the Fast Feedback Cycle. In an engineering environment traditionally rooted in strong analytics, the ideas and practices for Scenario-Focused Engineering may seem counter-intuitive. Learn how to change your team's mindset from deciding what a product, service, or device will do and solving technical problems to discovering and building what customers actually want. Improve the methods and mindsets you use to: Select a target customer to maximize carryover Discover your customer's unarticulated needs Use storytelling to align your team and partners Mitigate tunnel vision to generate more innovative ideas Use experimentation to fail fast and learn Solicit early and ongoing feedback Iterate using a funnel-shaped approach Manage your projects around end-to-end experiences Build a team culture that puts the customer first

This book constitutes the refereed proceedings of the 11th European Conference on Evolutionary Computation in Combinatorial Optimization, EvoCOP 2011, held in Torino, Italy, in April 2011. The 22 revised full papers presented were carefully reviewed and selected from 42 submissions. The papers present the latest research and discuss current developments and applications in metaheuristics - a paradigm to effectively solve difficult combinatorial optimization problems appearing in various industrial, economical, and scientific domains. Prominent examples of metaheuristics are evolutionary algorithms, simulated annealing, tabu search, scatter search, memetic algorithms, variable neighborhood search, iterated local search, greedy randomized adaptive search procedures, estimation of distribution algorithms, and ant colony optimization.

These proceedings of the 2012 International Conference on Mechatronic Systems and Automation Systems (MSAS 2012), held on July 21st 2012 in Wuhan (China), comprise 102 peer-reviewed papers grouped into 6 chapters: Mechatronic Devices and Systems; Signal Processing and Measurement; Control and Automation Systems; Sensors; Material Science and Processing Technology in Manufacturing; Mechanical Engineering and Electrical Power

The leading edge of computer science research is notoriously ?ckle. New trends come and go with alarming and unflinching regularity. In such a rapidly changing ?eld, the fact that research interest in a subject lasts more than a year is worthy of note. The fact that, after ?ve years, interest not only remains, but actually continues to grow is highly unusual. As 1998 marked the ?fth birthday of the International Workshop on Agent Theories, Architectures, and Languages (ATAL), it seemed appropriate for the organizers of the original workshop to comment on this remarkable growth, and reflect on how the ?eld has developed and matured. The ?rst ATAL workshop was co-located with the Eleventh European Conference on Artificial Intelligence (ECAI-94), which was held in Amsterdam. The fact that we chose an AI conference to co-locate with is telling: at that time, we expected most research-

ers with an interest in agents to come from the AI community. The workshop, which was planned over the summer of 1993, attracted 32 submissions, and was attended by 55 people. ATAL was the largest workshop at ECAI-94, and the clear enthusiasm on behalf of the community made the decision to hold another ATAL workshop simple. The ATAL-94 proceedings were formally published in January 1995 under the title *Intelligent Agents*, and included an extensive review article, a glossary, a list of key agent systems, and — unusually for the proceedings of an academic workshop — a full subject index. The high scientific and production values embodied by the ATAL-94 proceedings appear to have been recognized by the community, and resulted in ATAL proceedings being the most successful sequence of books published in Springer-Verlag's *Lecture Notes in Artificial Intelligence* series.

- New York Times bestseller • The 100 most substantive solutions to reverse global warming, based on meticulous research by leading scientists and policymakers around the world “At this point in time, the *Drawdown* book is exactly what is needed; a credible, conservative solution-by-solution narrative that we can do it. Reading it is an effective inoculation against the widespread perception of doom that humanity cannot and will not solve the climate crisis. Reported by-effects include increased determination and a sense of grounded hope.” —Per Espen Stoknes, Author, *What We Think About When We Try Not To Think About Global Warming* “There’s been no real way for ordinary people to get an understanding of what they can do and what impact it can have. There remains no single, comprehensive, reliable compendium of carbon-reduction solutions across sectors. At least until now. . . . The public is hungry for this kind of practical wisdom.” —David Roberts, Vox “This is the ideal environmental sciences textbook—only it is too interesting and inspiring to be called a textbook.” —Peter Kareiva, Director of the Institute of the Environment and Sustainability, UCLA In the face of widespread fear and apathy, an international coalition of researchers, professionals, and scientists have come together to offer a set of realistic and bold solutions to climate change. One hundred techniques and practices are described here—some are well known; some you may have never heard of. They range from clean energy to educating girls in lower-income countries to land use practices that pull carbon out of the air. The solutions exist, are economically viable, and communities throughout the world are currently enacting them with skill and determination. If deployed collectively on a global scale over the next thirty years, they represent a credible path forward, not just to slow the earth’s warming but to reach drawdown, that point in time when greenhouse gases in the atmosphere peak and begin to decline. These measures promise cascading benefits to human health, security, prosperity, and well-being—giving us every reason to see this planetary crisis as an opportunity to create a just and livable world.

K2 blackpearl and the K2 platform is a large, powerful, "game-changing" application platform built on Microsoft technologies. Understanding it from top to bottom would be a great task for a single person, which is why we have gathered more than a dozen authors to supply you with the information to successfully transform your company into a process-oriented, efficient business that can grow with the K2 platform. Since this is the first book on K2 blackpearl, you will find a broad range of topics in this book, from the market in which K2 blackpearl is aimed to the architecture of the platform, from how to approach process design to developing your own custom user manager. The first part of the book is meant for everyone and provides an understanding of K2 blackpearl and where it fits in the marketplace. It is included to provide a framework for thinking about various aspects of process-driven applications, including how they differ from business process management techniques; identifying processes in your company to automate, the different pieces that make up a process; measuring the success of your efforts; and finally shifting your company's culture in the direction of process efficiency. This section may be the only section you need to read if you are sponsoring a process improvement effort in your company. If you are responsible for leading the effort, make sure to read Chapters 3 and 4. The other parts are meant to provide details on how to effectively deploy and use K2 blackpearl and include a broad range of topics. Read what you are most interested in, but also make sure to read Chapter 8, which will give you a great foundation to start designing processes with K2 blackpearl. Chapter 14 is also recommended for everyone because it provides an overview of the available K2 Designers and how you can share projects among them. K2 blackpearl is the main subject of this book, although we devote an entire chapter, Chapter 23, to the add-on product K2 connect to give you an understanding of how to bring SAP data into your processes. We also talk a bit about K2 blackpoint, particularly in the SharePoint chapters. Since K2 blackpoint is built on the K2 blackpearl foundation, many of the same concepts apply to that product as well, but we do not point out the differences between K2 blackpearl and K2 blackpoint. For that information browse to [www.k2.com](http://www.k2.com).

This book is about making decisions driven by experience. In this context, a scenario is an observation that comes from the environment, and scenario optimization refers to optimizing decisions over a set of available scenarios. Scenario optimization can be applied across a variety of fields, in-

cluding machine learning, quantitative finance, control, and identification. This concise, practical book provides readers with an easy access point to make the scenario approach understandable to nonexperts, and offers an overview of various decision frameworks in which the method can be used. It contains numerous examples and diverse applications from a broad range of domains, including systems theory, control, biomedical engineering, economics, and finance. Practitioners can find "easy-to-use recipes," while theoreticians will benefit from a rigorous treatment of the theoretical foundations of the method, making it an excellent starting point for scientists interested in doing research in this field. Introduction to the Scenario Approach will appeal to scientists working in optimization, practitioners working in myriad fields involving decision-making, and anyone interested in data-driven decision-making.

This book provides readers with a timely snapshot of ergonomics research and methods applied to the design, development and evaluation, of products, systems and services. It gathers theoretical contributions, case studies and reports on technical interventions focusing on a better understanding of human machine interaction, and user experience for improving product design. The book covers a wide range of established and emerging topics in user-centered design, relating to design for special populations, design education, workplace assessment and design, anthropometry, ergonomics of buildings and urban design, sustainable design, as well as visual ergonomics and interdisciplinary research and practices, among others. Based on the AHFE 2021 International Conference on Ergonomics in Design, held virtually on 25-29 July, 2021, from USA, the book offers a thought-provoking guide for both researchers and practitioners in human-centered design and related fields.

Intended for an undergraduate criminal law course within a criminal justice program, *A Brief Introduction to Criminal Law, Second Edition* provides a gentle introduction to the subject ideal for students that do not intend to pursue law school. The principles of criminal law are explained step-by-step with a focus on the professional applications of legal principles within the criminal justice system. The second edition contains more and updated case studies, additional coverage of constitutional law and terrorism, and enhanced figures and tables. Written in a conversational tone, *A Brief Introduction to Criminal Law, Second Edition* is the ideal resource for undergraduate students taking a criminal law course.

Metal contamination of groundwater results from many human activities, including agriculture, mining, and the disposal of municipal waste and fly ash. *Metals in Groundwater* describes the transport of metals to groundwater from these and other sources. It also covers risk assessment of metals in groundwater, coupling of chemicals and hydrological models, and sorption of metals onto soils and clays. The speciation of metals is examined in detail. The book will interest researchers in environmental quality, mining, and agriculture; consultants; industry professionals; and personnel within regulatory agencies.

Develops scenario planning methods in ways that link scenario analysis to improved decision making, engage time-poor senior decision makers, attenuate decision makers' tendency to deflect responsibility for bleak, negative scenario outcomes, and enhance causal analysis within scenario-storyline development. What if? Two of the most powerful – and frightening – words in business. Almost as bad as “I didn’t see that coming.” Some things that transform the marketplace overnight come from nowhere. Some things that create potentially critical under-performance are genuinely unforeseeable. Sometimes it is impossible to predict how a change in an organizational strategy will play out. Some things and sometimes – but not many and not often. Decision makers in organizations face more-and-more complex and ambiguous problems that need to be addressed under time pressure – and the need for practical decision support has become essential. The range of methods in this book will enable you to be prepared, proactive and resilient no matter what the future brings. Based on up-to-date academic research and years of application and iteration in the real world, this book, illustrated with examples of the value delivered in Europe, Australia and the Middle East, will transfer practical skills in scenario thinking using step-by-step instructions. This thoroughly revised and expanded second edition introduces these new approaches in detail, with clear guidelines and examples to enable the reader to select and implement the most appropriate scenario method to suit the issue at hand – considering the timeframe for its investigation, the resources available and the outcomes expected.

This volume LNCS 12735 constitutes the papers of the 18th International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research, CPAIOR 2021, which was held in Vienna, Austria, in 2021. Due to the COVID-19 pandemic the conference was held online. The 30 regular papers presented were carefully reviewed and selected from a total of 75 submissions. The conference program included a Master Class on the topic "Explanation and Verification of Machine Learning Models".