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Giving a basic overview of the technologies supporting cognitive radio this introductory-level text follows a logical approach, starting with the physical layer and concluding with applications and general issues. It provides a background to advances in the field of cognitive radios and a new exploration of how these radios can work together as a network. Cognitive Radio Networks starts with an introduction to the fundamentals of wireless communications, introducing technologies such as OFDM & MIMO. It moves onto cover software defined radio and explores and contrasts wireless, cooperative and cognitive networks and communications. Spectrum sensing, medium access control and network layer design are examined before the book concludes by covering the topics of trusted cognitive radio networks and spectrum management. Unique in providing a brief but clear tutorial and reference to cognitive radio networks this book is a single reference, written at the appropriate level for newcomers as well as providing an encompassing text for those with more knowledge of the subject. One of the first books to provide a systematic description of cognitive radio networks Provides pervasive background knowledge including both wireless communications and wireless networks Written by leading experts in the field Full network stack investigation

In order to successfully compete as a sustainable energy source, the value of biomass must be maximized through the production of valuable co-products in the biorefinery. Specialty chemicals and other biobased products can be extracted from biomass prior to or after the conversion process, thus increasing the overall profitability and sustainability of the biorefinery. Biorefinery Co-Products highlights various co-products that are present in biomass prior to and after processing, describes strategies for their extraction, and presents examples of bioenergy feedstocks that contain high value products. Topics covered include: Bioactive compounds from woody biomass Phytochemicals from sugar cane, citrus waste and algae Valuable products from corn and other oil seed crops Proteins from forages Enhancing the value of existing biomass processing streams Aimed at academic researchers, professionals and specialists in the bioenergy industry, Biorefinery Co-Products is an essential text for all scientists and engineers working on the efficient separation, purification and manufacture of value-added biorefinery co-products. For more information on the Wiley Series in Renewable resources, visit www.wiley.com/go/rrs

Digital government is a new frontier of the development of electronic commerce. Electronic Government Strategies and Implementation is a timely piece to address the issues involved in strategically implementing digital government, covering the various aspects of digital government strategic issues and implementations from the perspectives of both developed and developing countries. This book combines e-government implementation experiences from both developed and developing countries, and is useful to researchers and practitioners in the area as well as instructors teaching courses related to digital government and/or electronic commerce.

ARIS (Architecture of Integrated Information Systems) is a unique and internationally renowned method for optimizing business processes and implementing application systems. This book enhances the proven ARIS concept by describing product flows and explaining how to classify modern software concepts. The importance of the link between business process organization and strategic management is stressed. Bridging the gap between the different approaches in business theory and information technology, the ARIS concept provides a full-circle approach-from the organizational design of business processes to IT implementation. With an emphasis on SAP R/3, real-world examples of standard software solutions illustrate these business process frameworks.

This book constitutes the refereed proceedings of the 10th International Conference on Parallel Problem Solving from Nature, PPSN 2008, held in Dortmund, Germany, in September 2008. The 114 revised full papers presented were carefully reviewed and selected from 206 submissions. The conference covers a wide range of topics, such as evolutionary computation, quantum computation, molecular computation, neural computation, artificial life, swarm intelligence, artificial ant systems, artificial immune systems, self-organizing systems, emergent behaviors, and applications to real-world problems. The papers are organized in topical sections on formal theory, new techniques, experimental analysis, multiobjective optimization, hybrid methods, and applications. An update of the definitive annual reference source in the field of aluminum production and related light metals technologies, a great mix of materials science and practical, applied technology surrounding aluminum, bauxite, aluminum reduction, rolling, casting, and production.

Manufacturing and process plants must be regularly closed down for planned maintenance operations. This may entail the complete shutdown and re-start of large-scale serial and batch operations and must be performed in as short a period of time as is cost-effective. This is the process of turnaround, and as the processes are often high value and the maintenance operations intensive, complex and costly, it is vital that it be planned and carried out effectively. Tom Lenahan is an acknowledged expert in this field, who has worked and consulted internationally, and his book will show the maintenance manager or project leader how to get the job done correctly. This will include ensuring that lost production value (including sourcing replacement capacity) is balanced against intensive maintenance costs, as well as numerous other factors that may not be obvious to the first-time shutdown manager. The book draws upon his many years of experience with ICI, and has been written in conjunction with Eutech Engineering Services Ltd. Foreword by Anthony Kelly, author of Maintenance Strategy and Maintenance Organization and Systems

This book constitutes the proceedings of the 39th SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, AI 2019, held in Cambridge, UK, in December 2019. The 29 full papers and 14 short papers presented in this volume were carefully reviewed and selected from 49 submissions. The volume includes technical papers presenting new and innovative developments in the field as well as application papers presenting innovative applications of AI techniques in a number of subject domains. The papers are organized in the following topical sections: machine learning; knowledge discovery and data mining; agents, knowledge acquisition and ontologies; medical applications; applications of evolutionary algorithms; machine learning for time series data; applications of machine learning; and knowledge acquisition.

In today's digital era, increasing numbers of youth around the world learn English outside classrooms, frequently with the use of technology. This timely book brings together research and theory on the increasingly common phenomenon of Informal Digital Learning of English (IDLE) among students of all ages and across a wide range of contexts globally. By examining the positive impact of IDLE on students' reading, writing, listening, and speaking abilities, as well as the unique challenges that result, Lee synthesizes research in one accessible and comprehensive volume in this rapidly developing domain. This book addresses key concepts, including Computer Assisted Language Learning, the impact on standardized assessment, and the role of classroom learning. Lee offers empirically tested activities, pedagogical recommendations, and lesson plans to engage ESL/EFL students. The research overview and practical offerings make this an ideal text for

courses in TESOL on online education, language teaching online, digital learning, community and language, and applied linguistics. Light Metals 2009 presents the most up-to-date information on the state of primary aluminum science and technology. It's a great mix of practical applied technology and hard science, which is of invaluable benefit to the global aluminum industry as it strives to cut costs and increase profitability. Areas covered include: Alumina and Bauxite Aluminum Reduction Technology Cast Shop for Aluminum Production Electrode Technology for Aluminum Production Aluminum Hot Rolling/Aluminum Cold Rolling and Strip Process In the light metals industry, aluminum will always have serious competition from other materials. Held at the TMS Annual Meeting & Exhibition each year, the Light Metals series has become the definitive annual reference source in the field of aluminum production and related light metals technologies. How can it be that in this age of sophisticated communications technology, our interpersonal communications are suffering? The answer is that few people take the time (or feel they have the time) to learn the skills needed for effective one-on-one communication. In fact, few are even aware that communication skills can be learned. Peter Urs Bender and Robert Tracz know differently. As they prove in this lively A to Z of key communication concepts, everyone can learn to communicate freely, persuasively, and with confidence. Secrets of Face-to-Face Communication is packed with helpful tips, illustrative anecdotes, and proven systems that, when applied, will improve your business and personal relationships alike. Whether you are an entrepreneur looking for more successful interactions with clients, a manager trying to deal with difficult people, or an employee seeking more productive relationships with your boss or coworkers, you'll find what you need in Secrets of Face-to-Face Communication. So stop wasting time on avoidable misunderstandings and bad feelings -- and start communicating with power! Book jacket.

This Festschrift honors George Samuel Fishman, one of the founders of the field of computer simulation and a leader of the disciplines of operations research and the management sciences for the past few decades, on the occasion of his seventieth birthday. The papers in this volume span the theory, methodology, and application of computer simulation. The lead article is appropriately titled "George Fishman's Professional Career." In this article we discuss George's contributions to operations research and the management sciences, with special emphasis on his role in the advancement of the field of simulation since the 1960s. We also include a brief personal biography together with comments by several individuals about the extraordinary effect that George has had on all his students, colleagues, and friends.

This second article, titled "A Conversation with George Fishman," is the transcript of an extended interview with George that we conducted in October 2007. In the article titled "Computer Intensive Statistical Model Building," Russell Cheng studies resampling methods for building parsimonious multiple linear regression models so as to represent accurately the behavior of the dependent variable in terms of the smallest possible subset of explanatory (independent) variables. The author shows how bootstrap resampling can be used not only for rapid identification of good models but also for efficient comparison of competing models.

Artificial Intelligence XXXVI 39th SGAI International Conference on Artificial Intelligence, AI 2019, Cambridge, UK, December 17–19, 2019, Proceedings Springer Nature

This pioneering book addresses the latest research findings and application results on disruption management, which is the study of how to dynamically recover a predetermined operational plan when various disruptions prevent the original plan from being executed smoothly. This book describes in detail how ARIS methods model and identify business processes by means of the UML (Unified Modeling Language), leading to an information model that serves as the basis for a systematic and intelligent development of application systems. Multiple real-world examples using SAP R/3 illustrate aspects of business process modeling including methods of knowledge management, implementation of workflow systems and standard software solutions, and the deployment of ARIS methods.

Written by one of the best-known probabilists in the world this text offers a clear and modern presentation of modern probability theory and an exposition of the interplay between the properties of metric spaces and those of probability measures. This text is the first at this level to include discussions of the subadditive ergodic theorems, metrics for convergence in laws and the Borel isomorphism theory. The proofs for the theorems are consistently brief and clear and each chapter concludes with a set of historical notes and references. This book should be of interest to students taking degree courses in real analysis and/or probability theory.

Known as the bible of biomedical engineering, The Biomedical Engineering Handbook, Fourth Edition, sets the standard against which all other references of this nature are measured. As such, it has served as a major resource for both skilled professionals and novices to biomedical engineering. Biomedical Engineering Fundamentals, the first volume of the handbook, presents material from respected scientists with diverse backgrounds in physiological systems, biomechanics, biomaterials, bioelectric phenomena, and neuroengineering. More than three dozen specific topics are examined, including cardiac biomechanics, the mechanics of blood vessels, cochlear mechanics, biodegradable biomaterials, soft tissue replacements, cellular biomechanics, neural engineering, electrical stimulation for paraplegia, and visual prostheses. The material is presented in a systematic manner and has been updated to reflect the latest applications and research findings.

From its early beginnings in the fifties and sixties the field of neural networks has been steadily growing. The first wave was driven by a handful of pioneers who first discovered analogies between machines and biological systems in communication, control and computing. Technological constraints held back research considerably, but gradually computers have become less expensive and more accessible and software tools increasingly more powerful. Mathematical techniques, developed by computer-aware people, have steadily accumulated and the second wave has begun. Researchers from such diverse areas as psychology, mathematics, physics, neuroscience and engineering now work together in the neural networking field.

This book has resulted from the activities of IFAC TC 5.2 "Manufacturing Modelling for Management and Control". The book offers an introduction and advanced techniques of scheduling applications to cloud manufacturing and Industry 4.0 systems for larger audience. This book uncovers fundamental principles and recent developments in the theory and application of scheduling methodology to cloud manufacturing and Industry 4.0. The purpose of this book is to present recent developments in scheduling in cloud manufacturing and Industry 4.0 and to systemize these developments in new taxonomies and methodological principles to shape this new research domain. This book addresses the needs of both researchers and practitioners to uncover the challenges and opportunities of scheduling techniques' applications to cloud manufacturing and Industry 4.0. For the first time, it comprehensively conceptualizes scheduling in cloud manufacturing and Industry 4.0 systems as a new research domain. The chapters of the book are written by the leading international experts and utilize methods of operations research, industrial engineering and computer science. Such a multi-disciplinary combination is unique and comprehensively deciphers major problem taxonomies, methodologies, and applications to scheduling in cloud manufacturing and Industry 4.0.

This book offers a comprehensive review of multilabel techniques widely used to classify and label texts, pictures, videos and music in the Internet. A deep review of the specialized literature on the field includes the available software needed to work with this kind of data. It provides the user with the software tools needed to deal with multilabel data, as well as step by step instruction

