

Airline Fleet Planning Models Mit Opencourseware

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Innovation U. - Louis G. Tornatzky 2002

Dictionary of Acronyms and Technical Abbreviations - Jakob Vlietstra 2012-12-06

This Dictionary covers information and communication technology (ICT), including hardware and software; information networks, including the Internet and the World Wide Web; automatic control; and ICT-related computer-aided fields. The Dictionary also lists abbreviated names of relevant organizations, conferences, symposia and workshops. This reference is important for all practitioners and users in the areas mentioned above, and those who consult or write technical material. This Second Edition contains 10,000 new entries, for a total of 33,000.

Moral Machines - Wendell Wallach 2010-07-15

"Moral Machines is a fine introduction to the emerging field of robot ethics. There is much here that will interest ethicists, philosophers, cognitive scientists, and roboticists." ---Peter Danielson, Notre Dame Philosophical Reviews --

Advocacy And Social Work Practice - Wilks, Tom 2012-04-01

This book fills the gap in the market for an accessible, general introduction to advocacy, specifically aimed at social workers. The book looks at the value base of advocacy as well as emphasising practice and skills such as assertiveness and negotiation.

Fairing Well .: - Christian Gelzer 2011

In the Bubble - John Thackara 2006-02-17

How to design a world in which we rely less on stuff, and more on people. We're filling up the world with technology and devices, but we've lost sight of an important question: What is this stuff for? What value does it add to our lives? So asks author John Thackara in his new book, *In the Bubble: Designing for a Complex World*. These are tough questions for the pushers of technology to answer. Our economic system is centered on technology, so it would be no small matter if "tech" ceased to be an end-in-itself in our daily lives. Technology is not going to go away, but the time to discuss the end it will serve is before we deploy it, not after. We need to ask what purpose will be served by the broadband communications, smart materials, wearable computing, and connected appliances that we're unleashing upon the world. We need to ask what impact all this stuff will have on our daily lives. Who will look after it, and how? *In the Bubble* is about a world based less on stuff and more on people. Thackara describes a transformation that is taking place now—not in a remote science fiction future; it's not about, as he puts it, "the schlock of the new" but about radical innovation already emerging in daily life. We are regaining respect for what people can do that technology can't. *In the Bubble* describes services designed to help people carry out daily activities in new ways. Many of these services involve technology—ranging from body implants to wide-bodied jets. But objects and systems play a supporting role in a people-centered world. The design focus is on services, not things. And new principles—above all, lightness—inform the way these services are designed and used. At the heart of *In the Bubble* is a belief, informed by a wealth of real-world examples, that ethics and responsibility can inform design decisions without impeding social and technical innovation.

Convex Analysis and Optimization - Dimitri Bertsekas 2003-03-01

A uniquely pedagogical, insightful, and rigorous treatment of the analytical/geometrical foundations of optimization. The book provides a comprehensive development of convexity theory, and its rich applications in optimization, including duality, minimax/saddle point theory, Lagrange multipliers, and Lagrangian relaxation/nondifferentiable optimization. It is an excellent supplement to several of our books: *Convex Optimization Theory* (Athena Scientific, 2009), *Convex Optimization Algorithms* (Athena Scientific, 2015), *Nonlinear Programming* (Athena Scientific, 2016), *Network Optimization* (Athena Scientific, 1998), and *Introduction to Linear Optimization* (Athena Scientific, 1997). Aside from a thorough account of

convex analysis and optimization, the book aims to restructure the theory of the subject, by introducing several novel unifying lines of analysis, including: 1) A unified development of minimax theory and constrained optimization duality as special cases of duality between two simple geometrical problems. 2) A unified development of conditions for existence of solutions of convex optimization problems, conditions for the minimax equality to hold, and conditions for the absence of a duality gap in constrained optimization. 3) A unification of the major constraint qualifications allowing the use of Lagrange multipliers for nonconvex constrained optimization, using the notion of constraint pseudonormality and an enhanced form of the Fritz John necessary optimality conditions. Among its features the book: a) Develops rigorously and comprehensively the theory of convex sets and functions, in the classical tradition of Fenchel and Rockafellar b) Provides a geometric, highly visual treatment of convex and nonconvex optimization problems, including existence of solutions, optimality conditions, Lagrange multipliers, and duality c) Includes an insightful and comprehensive presentation of minimax theory and zero sum games, and its connection with duality d) Describes dual optimization, the associated computational methods, including the novel incremental subgradient methods, and applications in linear, quadratic, and integer programming e) Contains many examples, illustrations, and exercises with complete solutions (about 200 pages) posted at the publisher's web site <http://www.athenasc.com/convexity.html>

Planning Models - Aura Reggiani 2006

While planning involves seeking ways of influencing future behavior, it is important to have at the outset an abstraction of the world upon which to base an assessment of outcomes. The papers in this collection represent some of the major works in the field of planning models, with land use planning as a core theme. The collection is divided into several parts: Part 1 focuses on location models and embraces a series of classic survey papers as well as a number of more specific contributions covering such topics as the distribution of residential activities. This is followed in part 2 by papers concerned with spatial interaction and, in particular the gravity model. Part 3 of the collection contains papers on micro-macro models that look at ways of moving from individual to collective behavior, whilst part 4 is concerned with dynamic models. Part 5 of the volume reflects an increasing interest in the role of various networks in the formulation of plans, and finally part 6 completes the volume with a selection of policy-planning models.

For the Love of Physics - Walter Lewin 2012-02-07

Original publication and copyright date: 2011.

Introduction to Process Safety for Undergraduates and Engineers - CCPS (Center for Chemical Process Safety) 2016-06-27

Familiarizes the student or an engineer new to process safety with the concept of process safety management Serves as a comprehensive reference for Process Safety topics for student chemical engineers and newly graduate engineers Acts as a reference material for either a stand-alone process safety course or as supplemental materials for existing curricula Includes the evaluation of SACHE courses for application of process safety principles throughout the standard Ch.E. curricula in addition to, or as an alternative to, adding a new specific process safety course Gives examples of process safety in design

Toward More Sustainable Infrastructure - Carl D. Martland 2011-02-22

Toward More Sustainable Infrastructure: Project Evaluation for Planners and Engineers provides readers a framework for understanding and evaluating infrastructure projects to improve their performance and sustainability, taking into account not only the financial and economic issues, but also the social and environmental impacts that affect the sustainability of infrastructure. Based on a course designed developed by the author over ten years at M.I.T., this text demonstrates how to apply the basic methods of engineering economics in evaluating major infrastructure projects and also demonstrates how these same techniques

can be useful with many routine business and personal decisions. It introduces students to project management, system performance, concepts of sustainability, methods of engineering economics, and provides numerous case studies, examples, and exercises based upon real world problems. This text fills a void in the education of many planners and engineering students, namely an understanding of why major infrastructure projects are undertaken, how they are structured and evaluated, and how they are financed. *Toward More Sustainable Infrastructure: Project Evaluation for Planners and Engineers* prepares readers to evaluate projects based upon an appreciation of the needs of society, the potential for sustainable development, and recognition of the problems that may result from poorly conceived or poorly implemented projects and programs.

Multi-criteria Decision Analysis - Alessio Ishizaka 2013-08-19

This book presents an introduction to MCDA followed by more detailed chapters about each of the leading methods used in this field. Comparison of methods and software is also featured to enable readers to choose the most appropriate method needed in their research. Worked examples as well as the software featured in the book are available on an accompanying website.

Workforce Education - William B. Bonvillian 2021-02-02

A roadmap for how we can rebuild America's working class by transforming workforce education and training. The American dream promised that if you worked hard, you could move up, with well-paying working-class jobs providing a gateway to an ever-growing middle class. Today, however, we have increasing inequality, not economic convergence. Technological advances are putting quality jobs out of reach for workers who lack the proper skills and training. In *Workforce Education*, William Bonvillian and Sanjay Sarma offer a roadmap for rebuilding America's working class. They argue that we need to train more workers more quickly, and they describe innovative methods of workforce education that are being developed across the country.

The Public Domain - James Boyle 2016-09-06

Please read the legal notice included in this e-book and/or check the copyright status in your country. In this enlightening book James Boyle describes what he calls the range wars of the information age—today's heated battles over intellectual property. Boyle argues that just as every informed citizen needs to know at least something about the environment or civil rights, every citizen should also understand intellectual property law. Why? Because intellectual property rights mark out the ground rules of the information society, and today's policies are unbalanced, unsupported by evidence, and often detrimental to cultural access, free speech, digital creativity, and scientific innovation. Boyle identifies as a major problem the widespread failure to understand the importance of the public domain—the realm of material that everyone is free to use and share without permission or fee. The public domain is as vital to innovation and culture as the realm of material protected by intellectual property rights, he asserts, and he calls for a movement akin to the environmental movement to preserve it. With a clear analysis of issues ranging from Jefferson's philosophy of innovation to musical sampling, synthetic biology and Internet file sharing, this timely book brings a positive new perspective to important cultural and legal debates. If we continue to enclose the "commons of the mind," Boyle argues, we will all be the poorer.

Fundamentals of Information Systems - Ralph Stair 2015-01-02

Combining the latest research and most current coverage available into a succinct nine chapters, *FUNDAMENTALS OF INFORMATION SYSTEMS, 8E* equips students with a solid understanding of the core principles of IS and how it is practiced. The streamlined 560-page eighth edition features a wealth of new examples, figures, references, and cases as it covers the latest developments from the field—and highlights their impact on the rapidly changing role of today's IS professional. In addition to a stronger career emphasis, the text includes expanded coverage of mobile solutions, energy and environmental concerns, the increased use of cloud computing across the globe, and two cases per chapter. Learning firsthand how information systems can increase profits and reduce costs, students explore new information on e-commerce and enterprise systems, artificial intelligence, virtual reality, green computing, and other issues reshaping the industry. The text introduces the challenges and risks of computer crimes, hacking, and cyberterrorism. It also presents some of the most current research on virtual communities, global IS work solutions, and social networking. No matter where students' career paths may lead, *FUNDAMENTALS OF INFORMATION SYSTEMS, 8E* and its resources can help them maximize their success as employees, decision makers, and business leaders. Important Notice: Media content

referenced within the product description or the product text may not be available in the ebook version.

Creating Livable Asian Cities - Bambang Susantono 2021-04-01

This book explores how Asia's fast-growing cities can fulfil their potential as engines of economic prosperity and provide a livable environment for all citizens. But for this to happen, major challenges that reduce urban communities' quality of life and economic opportunities must be addressed. These include poor planning, a lack of affordable housing, inequalities, pollution, climate vulnerabilities, and urban infrastructure deficits. The book's 19 articles unwrap these challenges and present solutions focused on smart and inclusive planning, sustainable transport and energy, innovative financing, and resilience and rejuvenation.

Mathematics for Computer Science - Eric Lehman 2017-03-08

This book covers elementary discrete mathematics for computer science and engineering. It emphasizes mathematical definitions and proofs as well as applicable methods. Topics include formal logic notation, proof methods; induction, well-ordering; sets, relations; elementary graph theory; integer congruences; asymptotic notation and growth of functions; permutations and combinations, counting principles; discrete probability. Further selected topics may also be covered, such as recursive definition and structural induction; state machines and invariants; recurrences; generating functions.

Classification Theory - S. Shelah 1990-12-06

In this research monograph, the author's work on classification and related topics are presented. This revised edition brings the book up to date with the addition of four new chapters as well as various corrections to the 1978 text. The additional chapters X - XIII present the solution to countable first order T of what the author sees as the main test of the theory. In Chapter X the Dimensional Order Property is introduced and it is shown to be a meaningful dividing line for superstable theories. In Chapter XI there is a proof of the decomposition theorems. Chapter XII is the crux of the matter: there is proof that the negation of the assumption used in Chapter XI implies that in models of T a relation can be defined which orders a large subset of $m|M|$. This theorem is also the subject of Chapter XIII.

Intermediate Microeconomics with Microsoft Excel - Humberto Barreto 2009-07-30

This unique text uses Microsoft Excel® workbooks to instruct students. In addition to explaining fundamental concepts in microeconomic theory, readers acquire a great deal of sophisticated Excel skills and gain the practical mathematics needed to succeed in advanced courses. In addition to the innovative pedagogical approach, the book features explicitly repeated use of a single central methodology, the economic approach. Students learn how economists think and how to think like an economist. With concrete, numerical examples and novel, engaging applications, interest for readers remains high as live graphs and data respond to manipulation by the user. Finally, clear writing and active learning are features sure to appeal to modern practitioners and their students. The website accompanying the text is found at www.depauw.edu/learn/microexcel.

A Postcapitalist Politics - J. K. Gibson-Graham 2006

Is there life after capitalism? In this creatively argued follow-up to their book *The End of Capitalism (As We Knew It)*, J. K. Gibson-Graham offer already existing alternatives to a global capitalist order and outline strategies for building alternative economies. *A Postcapitalist Politics* reveals a prolific landscape of economic diversity—one that is not exclusively or predominantly capitalist—and examines the challenges and successes of alternative economic interventions. Gibson-Graham bring together political economy, feminist poststructuralism, and economic activism to foreground the ethical decisions, as opposed to structural imperatives, that construct economic “development” pathways. Marshalling empirical evidence from local economic projects and action research in the United States, Australia, and Asia, they produce a distinctive political imaginary with three intersecting moments: a politics of language, of the subject, and of collective action. In the face of an almost universal sense of surrender to capitalist globalization, this book demonstrates that postcapitalist subjects, economies, and communities can be fostered. The authors describe a politics of possibility that can build different economies in place and over space. They urge us to confront the forces that stand in the way of economic experimentation and to explore different ways of moving from theory to action. J. K. Gibson-Graham is the pen name of Katherine Gibson and Julie Graham, feminist economic geographers who work, respectively, at the Australian National University in Canberra and the University of Massachusetts Amherst.

Reinforcement Learning and Optimal Control - Dimitri Bertsekas
2019-07-01

This book considers large and challenging multistage decision problems, which can be solved in principle by dynamic programming (DP), but their exact solution is computationally intractable. We discuss solution methods that rely on approximations to produce suboptimal policies with adequate performance. These methods are collectively known by several essentially equivalent names: reinforcement learning, approximate dynamic programming, neuro-dynamic programming. They have been at the forefront of research for the last 25 years, and they underlie, among others, the recent impressive successes of self-learning in the context of games such as chess and Go. Our subject has benefited greatly from the interplay of ideas from optimal control and from artificial intelligence, as it relates to reinforcement learning and simulation-based neural network methods. One of the aims of the book is to explore the common boundary between these two fields and to form a bridge that is accessible by workers with background in either field. Another aim is to organize coherently the broad mosaic of methods that have proved successful in practice while having a solid theoretical and/or logical foundation. This may help researchers and practitioners to find their way through the maze of competing ideas that constitute the current state of the art. This book relates to several of our other books: *Neuro-Dynamic Programming* (Athena Scientific, 1996), *Dynamic Programming and Optimal Control* (4th edition, Athena Scientific, 2017), *Abstract Dynamic Programming* (2nd edition, Athena Scientific, 2018), and *Nonlinear Programming* (Athena Scientific, 2016). However, the mathematical style of this book is somewhat different. While we provide a rigorous, albeit short, mathematical account of the theory of finite and infinite horizon dynamic programming, and some fundamental approximation methods, we rely more on intuitive explanations and less on proof-based insights. Moreover, our mathematical requirements are quite modest: calculus, a minimal use of matrix-vector algebra, and elementary probability (mathematically complicated arguments involving laws of large numbers and stochastic convergence are bypassed in favor of intuitive explanations). The book illustrates the methodology with many examples and illustrations, and uses a gradual expository approach, which proceeds along four directions: (a) From exact DP to approximate DP: We first discuss exact DP algorithms, explain why they may be difficult to implement, and then use them as the basis for approximations. (b) From finite horizon to infinite horizon problems: We first discuss finite horizon exact and approximate DP methodologies, which are intuitive and mathematically simple, and then progress to infinite horizon problems. (c) From deterministic to stochastic models: We often discuss separately deterministic and stochastic problems, since deterministic problems are simpler and offer special advantages for some of our methods. (d) From model-based to model-free implementations: We first discuss model-based implementations, and then we identify schemes that can be appropriately modified to work with a simulator. The book is related and supplemented by the companion research monograph *Rollout, Policy Iteration, and Distributed Reinforcement Learning* (Athena Scientific, 2020), which focuses more closely on several topics related to rollout, approximate policy iteration, multiagent problems, discrete and Bayesian optimization, and distributed computation, which are either discussed in less detail or not covered at all in the present book. The author's website contains class notes, and a series of videolectures and slides from a 2021 course at ASU, which address a selection of topics from both books.

The Continuing Study of Newspaper Reading - Advertising Research Foundation 1941

Airline Economics - George W. James 1982

Learning to Think Spatially - National Research Council 2005-02-03
Learning to Think Spatially examines how spatial thinking might be incorporated into existing standards-based instruction across the school curriculum. Spatial thinking must be recognized as a fundamental part of K-12 education and as an integrator and a facilitator for problem solving across the curriculum. With advances in computing technologies and the increasing availability of geospatial data, spatial thinking will play a significant role in the information-based economy of the twenty-first century. Using appropriately designed support systems tailored to the K-12 context, spatial thinking can be taught formally to all students. A geographic information system (GIS) offers one example of a high-technology support system that can enable students and teachers to practice and apply spatial thinking in many areas of the curriculum.
Four Colors Suffice - Robin J. Wilson 2002

On October 23, 1852, Professor Augustus De Morgan wrote a letter to a colleague, unaware that he was launching one of the most famous mathematical conundrums in history--one that would confound thousands of puzzlers for more than a century. This is the amazing story of how the "map problem" was solved. The problem posed in the letter came from a former student: What is the least possible number of colors needed to fill in any map (real or invented) so that neighboring counties are always colored differently? This deceptively simple question was of minimal interest to cartographers, who saw little need to limit how many colors they used. But the problem set off a frenzy among professional mathematicians and amateur problem solvers, among them Lewis Carroll, an astronomer, a botanist, an obsessive golfer, the Bishop of London, a man who set his watch only once a year, a California traffic cop, and a bridegroom who spent his honeymoon coloring maps. In their pursuit of the solution, mathematicians painted maps on doughnuts and horseshoes and played with patterned soccer balls and the great rhombicuboctahedron. It would be more than one hundred years (and countless colored maps) later before the result was finally established. Even then, difficult questions remained, and the intricate solution--which involved no fewer than 1,200 hours of computer time--was greeted with as much dismay as enthusiasm. Providing a clear and elegant explanation of the problem and the proof, Robin Wilson tells how a seemingly innocuous question baffled great minds and stimulated exciting mathematics with far-flung applications. This is the entertaining story of those who failed to prove, and those who ultimately did prove, that four colors do indeed suffice to color any map.

Introduction to Autonomous Mobile Robots, second edition - Roland Siegwart 2011-02-18

The second edition of a comprehensive introduction to all aspects of mobile robotics, from algorithms to mechanisms. Mobile robots range from the Mars Pathfinder mission's teleoperated Sojourner to the cleaning robots in the Paris Metro. This text offers students and other interested readers an introduction to the fundamentals of mobile robotics, spanning the mechanical, motor, sensory, perceptual, and cognitive layers the field comprises. The text focuses on mobility itself, offering an overview of the mechanisms that allow a mobile robot to move through a real world environment to perform its tasks, including locomotion, sensing, localization, and motion planning. It synthesizes material from such fields as kinematics, control theory, signal analysis, computer vision, information theory, artificial intelligence, and probability theory. The book presents the techniques and technology that enable mobility in a series of interacting modules. Each chapter treats a different aspect of mobility, as the book moves from low-level to high-level details. It covers all aspects of mobile robotics, including software and hardware design considerations, related technologies, and algorithmic techniques. This second edition has been revised and updated throughout, with 130 pages of new material on such topics as locomotion, perception, localization, and planning and navigation. Problem sets have been added at the end of each chapter. Bringing together all aspects of mobile robotics into one volume, *Introduction to Autonomous Mobile Robots* can serve as a textbook or a working tool for beginning practitioners. Curriculum developed by Dr. Robert King, Colorado School of Mines, and Dr. James Conrad, University of North Carolina-Charlotte, to accompany the National Instruments LabVIEW Robotics Starter Kit, are available. Included are 13 (6 by Dr. King and 7 by Dr. Conrad) laboratory exercises for using the LabVIEW Robotics Starter Kit to teach mobile robotics concepts.
Knowledge Management and Higher Education - Amy Scott Metcalfe 2006
"Using various social science perspectives, this book provide critical analyses of knowledge management in higher education, with an emphasis on unintended consequences and future implications"--Provided by publisher.

Flight Simulation - Alfred T. Lee 2017-03-02

Advances in computer, visual display, motion and force cueing and other technologies in the past two decades have had a dramatic effect on the design and use of simulation technology in aviation and other fields. The effective use of technology in training, safety investigation, engineering and scientific research requires an understanding of its capabilities and limitations. As the technology has as its primary goal the creation of virtual environments for human users, knowledge of human sensory, perceptual, and cognitive functioning is also needed. This book provides a review and analysis of the relevant engineering and science supporting the design and use of advanced flight simulation technologies. It includes chapters reviewing key simulation areas such as visual scene, motion, and sound simulation and a chapter analyzing the role of recreating the pilot's task environment in the overall effectiveness of simulators. The

design and use of flight simulation are addressed in chapters on the effectiveness of flight simulators in training and on the role of physical and psychological fidelity in simulator design. The problems inherent in the ground-based simulation of flight are also reviewed as are promising developments in flight simulation technology and the important role flight simulators play in advanced aviation research. The readership includes: flight simulation engineers and designers, human factors researchers and practitioners, aviation safety investigators, flight training management and instructors, training and instructional technologists, virtual environment design community, and regulatory authorities.

Buying the Big Jets - Paul Clark 2016-04-15

Selecting the right aircraft for an airline operation is a vastly complex process, involving a multitude of skills and considerable knowledge of the business. *Buying The Big Jets* was first published in 2001 to provide guidance to those involved in aircraft selection strategies. This Second Edition brings the picture fully up to date, incorporating new discussion on the strategies of low-cost carriers, and the significance of the aircraft cabin for long-haul operations. Latest developments in aircraft products are covered and there are fresh examples of best practice in airline fleet planning techniques. The book is essential reading for airline planners with fleet planning responsibility, consultancy groups, analysts studying aircraft performance and economics, airline operational personnel, students of air transport, leasing companies, aircraft value appraisers, and all who manage commercial aircraft acquisition programmes and provide strategic advice to decision-makers. This book is also a valuable tool for the banking community where insights into aircraft acquisition decisions are vital. *Buying The Big Jets* is an industry-specific example of strategic planning and is therefore a vital text for students engaged in graduate or post-graduate studies either in aeronautics or business administration.

Complex Systems Science in Biomedicine - Thomas Deisboeck 2007-06-13

Complex Systems Science in Biomedicine Thomas S. Deisboeck and J. Yasha Kresh *Complex Systems Science in Biomedicine* covers the emerging field of systems science involving the application of physics, mathematics, engineering and computational methods and techniques to the study of biomedicine including nonlinear dynamics at the molecular, cellular, multi-cellular tissue, and organismic level. With all chapters helmed by leading scientists in the field, *Complex Systems Science in Biomedicine's* goal is to offer its audience a timely compendium of the ongoing research directed to the understanding of biological processes as whole systems instead of as isolated component parts. In Parts I & II, *Complex Systems Science in Biomedicine* provides a general systems thinking perspective and presents some of the fundamental theoretical underpinnings of this rapidly emerging field. Part III then follows with a multi-scaled approach, spanning from the molecular to macroscopic level, exemplified by studying such diverse areas as molecular networks and developmental processes, the immune and nervous systems, the heart, cancer and multi-organ failure. The volume concludes with Part IV that addresses methods and techniques driven in design and development by this new understanding of biomedical science. Key Topics Include: • Historic Perspectives of General Systems Thinking • Fundamental Methods and Techniques for Studying Complex Dynamical Systems • Applications from Molecular Networks to Disease Processes • Enabling Technologies for Exploration of Systems in the Life Sciences *Complex Systems Science in Biomedicine* is essential reading for experimental, theoretical, and interdisciplinary scientists working in the biomedical research field interested in a comprehensive overview of this rapidly emerging field. About the Editors: Thomas S. Deisboeck is currently Assistant Professor of Radiology at Massachusetts General Hospital and Harvard Medical School in Boston. An expert in interdisciplinary cancer modeling, Dr. Deisboeck is Director of the Complex Biosystems Modeling Laboratory which is part of the Harvard-MIT Martinos Center for Biomedical Imaging. J. Yasha Kresh is currently Professor of Cardiothoracic Surgery and Research Director, Professor of Medicine and Director of Cardiovascular Biophysics at the Drexel University College of Medicine. An expert in dynamical systems, he holds appointments in the School of Biomedical Engineering and Health Systems, Dept. of Mechanical Engineering and Molecular Pathobiology Program. Prof. Kresh is Fellow of the American College of Cardiology, American Heart Association, Biomedical Engineering Society, American Institute for Medical and Biological Engineering.

Air Force Combat Units of World War II -

Photovoltaic/Thermal (PV/T) Systems - Ali H. A. Al-Waeli 2019-10-25

This book provides the most up-to-date information on hybrid solar cell and solar thermal collectors, which are commonly referred to as Photovoltaic/Thermal (PV/T) systems. PV/T systems convert solar radiation into thermal and electrical energy to produce electricity, utilize more of the solar spectrum, and save space by combining the two structures to cover lesser area than two systems separately. Research in this area is growing rapidly and is highlighted within this book. The most current methods and techniques available to aid in overall efficiency, reduce cost and improve modeling and system maintenance are all covered. In-depth chapters present the background and basic principles of the technology along with a detailed review of the most current literature. Moreover, the book details design criteria for PV/T systems including residential, commercial, and industrial applications. Provides an objective and decisive source for the supporters of green and renewable source of energy Discusses and evaluates state-of-the-art PV/T system designs Proposes and recommends potential designs for future research on this topic

The World Is Open - Curtis J. Bonk 2009-07-06

Discover the dramatic changes that are affecting all learners Web-based technology has opened up education around the world to the point where anyone can learn anything from anyone else at any time. To help educators and others understand what's possible, Curt Bonk employs his groundbreaking "WE-ALL-LEARN" model to outline ten key technology and learning trends, demonstrating how technology has transformed educational opportunities for learners of every age in every corner of the globe. The book is filled with inspiring stories of ordinary learners as well as interviews with technology and education leaders that reveal the power of this new way of learning. Captures the global nature of open education from those who are creating and using new learning technologies Includes a new Preface and Postscript with the latest updates A free companion web site provides additional stories and information Using the dynamic "WE-ALL-LEARN" model, learners, educators, executives, administrators, instructors, and parents can discover how to tap into the power of Web technology and unleash a world of information.

The Analytics Edge - Dimitris Bertsimas 2016

"Provides a unified, insightful, modern, and entertaining treatment of analytics. The book covers the science of using data to build models, improve decisions, and ultimately add value to institutions and individuals"--Back cover.

Ant Colony Optimization - Marco Dorigo 2004-06-04

An overview of the rapidly growing field of ant colony optimization that describes theoretical findings, the major algorithms, and current applications. The complex social behaviors of ants have been much studied by science, and computer scientists are now finding that these behavior patterns can provide models for solving difficult combinatorial optimization problems. The attempt to develop algorithms inspired by one aspect of ant behavior, the ability to find what computer scientists would call shortest paths, has become the field of ant colony optimization (ACO), the most successful and widely recognized algorithmic technique based on ant behavior. This book presents an overview of this rapidly growing field, from its theoretical inception to practical applications, including descriptions of many available ACO algorithms and their uses. The book first describes the translation of observed ant behavior into working optimization algorithms. The ant colony metaheuristic is then introduced and viewed in the general context of combinatorial optimization. This is followed by a detailed description and guide to all major ACO algorithms and a report on current theoretical findings. The book surveys ACO applications now in use, including routing, assignment, scheduling, subset, machine learning, and bioinformatics problems. AntNet, an ACO algorithm designed for the network routing problem, is described in detail. The authors conclude by summarizing the progress in the field and outlining future research directions. Each chapter ends with bibliographic material, bullet points setting out important ideas covered in the chapter, and exercises. *Ant Colony Optimization* will be of interest to academic and industry researchers, graduate students, and practitioners who wish to learn how to implement ACO algorithms.

Enhancing the Resilience of the Nation's Electricity System - National Academies of Sciences, Engineering, and Medicine 2017-10-25

Americans' safety, productivity, comfort, and convenience depend on the reliable supply of electric power. The electric power system is a complex "cyber-physical" system composed of a network of millions of components spread out across the continent. These components are owned, operated, and regulated by thousands of different entities. Power system operators work hard to assure safe and reliable service, but large outages

occasionally happen. Given the nature of the system, there is simply no way that outages can be completely avoided, no matter how much time and money is devoted to such an effort. The system's reliability and resilience can be improved but never made perfect. Thus, system owners, operators, and regulators must prioritize their investments based on potential benefits. Enhancing the Resilience of the Nation's Electricity System focuses on identifying, developing, and implementing strategies to increase the power system's resilience in the face of events that can cause large-area, long-duration outages: blackouts that extend over multiple service areas and last several days or longer. Resilience is not just about lessening the likelihood that these outages will occur. It is also about limiting the scope and impact of outages when they do occur, restoring power rapidly afterwards, and learning from these experiences to better deal with events in the future.

Principles of Computer System Design - Jerome H. Saltzer 2009-05-21

Principles of Computer System Design is the first textbook to take a principles-based approach to the computer system design. It identifies, examines, and illustrates fundamental concepts in computer system design that are common across operating systems, networks, database systems, distributed systems, programming languages, software engineering, security, fault tolerance, and architecture. Through carefully analyzed case studies from each of these disciplines, it demonstrates how to apply these concepts to tackle practical system design problems. To support the focus on design, the text identifies and explains abstractions that have proven successful in practice such as remote procedure call, client/service organization, file systems, data integrity, consistency, and authenticated messages. Most computer systems are built using a handful of such abstractions. The text describes how these abstractions are implemented, demonstrates how they are used in different systems, and prepares the reader to apply them in future designs. The book is recommended for junior and senior undergraduate students in Operating Systems, Distributed Systems, Distributed Operating Systems and/or Computer Systems Design courses; and professional computer systems designers. Features: Concepts of computer system design guided by fundamental principles. Cross-cutting approach that identifies abstractions common to networking, operating systems, transaction systems, distributed systems, architecture, and software engineering. Case studies that make the abstractions real: naming (DNS and the URL); file systems (the UNIX file system); clients and services (NFS); virtualization (virtual machines); scheduling (disk arms); security (TLS). Numerous pseudocode fragments that provide concrete examples of abstract concepts. Extensive support. The authors and MIT OpenCourseWare provide on-line, free of charge, open educational resources, including additional chapters, course syllabi, board layouts and slides, lecture videos, and an archive of lecture schedules, class assignments, and design projects.

[Educational Research and Innovation Measuring Innovation in Education 2019 What Has Changed in the Classroom?](#) - Vincent-Lancrin Stéphan 2019-03-05

Measuring innovation in education and understanding how it works is essential to improve the quality of the education sector. Monitoring systematically how pedagogical practices evolve would considerably

increase the international education knowledge base. We need to examine whether, and how ...

Sustainable Development and Resource Productivity - Harry Lehmann 2020-11-02

The fourth Factor X publication from the German Environment Agency (Umweltbundesamt, UBA), Sustainable Development and Resource Productivity: The Nexus Approaches explores the interdependencies of sustainable development paths and associated resource requirements, describing and analysing the necessities for a more resource efficient world. The use of and competition for increasingly scarce resources are growing worldwide with current production and consumption patterns of industrialised economies soon to reach the point where the ecosphere will be overtaxed far beyond its limits. Against this background, this volume examines the important initiatives to monitor resource use at the international, EU and national level. The current trends and challenges related to sustainable resource use are discussed, including international challenges for a resource efficient world, megatrends, justice and equitable access to resources. In the second part of the book, contributions examine implementation strategies. They assess the concept known as circular economy and discuss the theory of growth and the role of the financial and education systems. The final section places special emphasis on practical examples. Overall, the book presents concrete ways and examples of achieving more sustainability in practice. Discussing solutions for a more sustainable use of natural resources, this book is essential reading for scholars and students of natural resources and sustainable development and decision-makers and experts from the fields of policy development, industry and civil society.

Operations Research in the Airline Industry - Gang Yu 1997-12-31

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