

Peter Rein Engineering Wordpress

Wildland fires are occurring more frequently and affecting more of Earth's surface than ever before. These fires affect the properties of soils and the processes by which they form, but the nature of these impacts has not been well understood. Given that healthy soil is necessary to sustain biodiversity, ecosystems and agriculture, the impact of fire on soil is a vital field of research. Fire Effects on Soil Properties brings together current research on the effects of fire on the physical, biological and chemical properties of soil. Written by over 60 international experts in the field, it includes examples from fire-prone areas across the world, dealing with ash, meso and macrofauna, smouldering fires, recurrent fires and management of fire-affected soils. It also describes current best practice methodologies for research and monitoring of fire effects and new methodologies for future research. This is the first time information on this topic has been presented in a single volume and the book will be an important reference for students, practitioners, managers and academics interested in the effects of fire on ecosystems, including soil scientists, geologists, forestry researchers and environmentalists.

This is part of a ten volume set of reference books offering authoritative and engaging critical overviews of the state of political science. This work explores the business end of politics, where theory meets practice in the pursuit of public good.

This edited monograph offers a summary of future mathematical methods supporting the recent energy sector transformation. It collects current contributions on innovative methods and algorithms. Advances in mathematical techniques and scientific computing methods are presented centering around economic aspects, technical realization and large-scale networks. Over twenty authors focus on the mathematical modeling of such future systems with careful analysis of desired properties and arising scales. Numerical investigations include efficient methods for the simulation of possibly large-scale interconnected energy systems and modern techniques for optimization purposes to guarantee stable and reliable future operations. The target audience comprises research scientists, researchers in the R&D field, and practitioners. Since the book highlights possible future research directions, graduate students in the field of mathematical modeling or electrical engineering may also benefit strongly. .

Handbook of Sugar Refining

Learning to Thrive with Self-Managing Teams

Structural Design for Fire Safety

New Civil Engineer

The Oxford Companion to Sugar and Sweets

Or, the Way of the Chief Engineer

The significantly expanded and updated new edition of a widely used text on reinforcement learning, one of the most active research areas in artificial intelligence. Reinforcement learning, one of the most active research areas in artificial intelligence, is a computational approach to learning whereby an agent tries to maximize the total amount of reward it receives while interacting with a complex, uncertain environment. In Reinforcement Learning, Richard Sutton and Andrew Barto provide a clear and simple account of the field's key ideas and algorithms. This second edition has been significantly expanded and updated, presenting new topics and updating coverage of other topics. Like the first edition, this

second edition focuses on core online learning algorithms, with the more mathematical material set off in shaded boxes. Part I covers as much of reinforcement learning as possible without going beyond the tabular case for which exact solutions can be found. Many algorithms presented in this part are new to the second edition, including UCB, Expected Sarsa, and Double Learning. Part II extends these ideas to function approximation, with new sections on such topics as artificial neural networks and the Fourier basis, and offers expanded treatment of off-policy learning and policy-gradient methods. Part III has new chapters on reinforcement learning's relationships to psychology and neuroscience, as well as an updated case-studies chapter including AlphaGo and AlphaGo Zero, Atari game playing, and IBM Watson's wagering strategy. The final chapter discusses the future societal impacts of reinforcement learning.

Chemical Engineering Design, Second Edition, deals with the application of chemical engineering principles to the design of chemical processes and equipment. Revised throughout, this edition has been specifically developed for the U.S. market. It provides the latest US codes and standards, including API, ASME and ISA design codes and ANSI standards. It contains new discussions of conceptual plant design, flowsheet development, and revamp design; extended coverage of capital cost estimation, process costing, and economics; and new chapters on equipment selection, reactor design, and solids handling processes. A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data, and Excel spreadsheet calculations, plus over 150 Patent References for downloading from the companion website. Extensive instructor resources, including 1170 lecture slides and a fully worked solutions manual are available to adopting instructors. This text is designed for chemical and biochemical engineering students (senior undergraduate year, plus appropriate for capstone design courses where taken, plus graduates) and lecturers/tutors, and professionals in industry (chemical process, biochemical, pharmaceutical, petrochemical sectors). New to this edition: Revised organization into Part I: Process Design, and Part II: Plant Design. The broad themes of Part I are flowsheet development, economic analysis, safety and environmental impact and optimization. Part II contains chapters on equipment design and selection that can be used as supplements to a lecture course or as essential references for students or practicing engineers working on design projects. New discussion of conceptual plant design, flowsheet development and revamp design Significantly increased coverage of capital cost estimation, process costing and economics New chapters on equipment selection, reactor design and solids handling processes New sections on fermentation, adsorption, membrane separations, ion exchange and chromatography Increased coverage of batch processing, food, pharmaceutical and biological processes All equipment chapters in Part II revised and updated with current information Updated throughout for latest US codes and standards, including API, ASME and ISA design codes and ANSI standards Additional worked examples and homework problems The most complete and up to date coverage of equipment selection 108 realistic commercial design projects from diverse industries A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data and Excel spreadsheet calculations plus over 150 Patent References, for downloading from the companion website Extensive instructor resources: 1170 lecture slides plus fully worked solutions manual available to adopting instructors Cane Sugar Engineering Cane Sugar Engineering Handbook of Sugar Refining A Manual for the Design and Operation of Sugar Refining Facilities John Wiley & Sons The American Who Taught the Japanese About Quality Cane Sugar Engineering The Life Work of Arend Lijphart Democracy and Institutions

Chemical Engineering Progress

The Engineer

This reference book provides a fully integrated novel approach to the development of high-power, single-transverse mode, edge-emitting diode lasers by addressing the complementary topics of device engineering, reliability engineering and device diagnostics in the same book, and thus closes the gap in the current book literature. Diode laser fundamentals are discussed, followed by an elaborate discussion of problem-oriented design guidelines and techniques, and by a systematic treatment of the origins of laser degradation and a thorough exploration of the engineering means to enhance the optical strength of the laser. Stability criteria of critical laser characteristics and key laser robustness factors are discussed along with clear design considerations in the context of reliability engineering approaches and models, and typical programs for reliability tests and laser product qualifications. Novel, advanced diagnostic methods are reviewed to discuss, for the first time in detail in book literature, performance- and reliability-impacting factors such as temperature, stress and material instabilities. Further key features include: practical design guidelines that consider also reliability related effects, key laser robustness factors, basic laser fabrication and packaging issues; detailed discussion of diagnostic investigations of diode lasers, the fundamentals of the applied approaches and techniques, many of them pioneered by the author to be fit-for-purpose and novel in the application; systematic insight into laser degradation modes such as catastrophic optical damage, and a wide range of technologies to increase the optical strength of diode lasers; coverage of basic concepts and techniques of laser reliability engineering with details on a standard commercial high power laser reliability test program. Semiconductor Laser Engineering, Reliability and Diagnostics reflects the extensive expertise of the author in the diode laser field both as a top scientific researcher as well as a key developer of high-power highly reliable devices. With invaluable practical advice, this new reference book is suited to practising researchers in diode laser technologies, and to postgraduate engineering students. Dr. Peter W. Epperlein is Technology Consultant with his own semiconductor technology consulting business Pwe-PhotonicsElectronics-IssueResolution in the UK. He looks back at a thirty years career in cutting edge photonics and electronics industries with focus on emerging technologies, both in global and start-up companies, including IBM, Hewlett-Packard, Agilent Technologies, Philips/NXP, Essient Photonics and IBM/JDSU Laser Enterprise. He holds Pre-Dipl. (B.Sc.), Dipl. Phys. (M.Sc.) and Dr. rer. nat. (Ph.D.) degrees in physics, magna cum laude, from the University of Stuttgart, Germany. Dr. Epperlein is an internationally recognized expert in compound semiconductor and diode laser technologies. He has accomplished R&D in many device areas such as semiconductor lasers, LEDs, optical modulators, quantum well devices, resonant tunneling devices, FETs, and superconducting tunnel junctions and integrated circuits. His pioneering work on sophisticated

diagnostic research has led to many world's first reports and has been adopted by other researchers in academia and industry. He authored more than seventy peer-reviewed journal papers, published more than ten invention disclosures in the IBM Technical Disclosure Bulletin, has served as reviewer of numerous proposals for publication in technical journals, and has won five IBM Research Division Awards. His key achievements include the design and fabrication of high-power, highly reliable, single mode diode lasers. Book Reviews "Semiconductor L

Standard Guidelines for Managed Aquifer Recharge, ASCE/EWRI 69-19, describes current practice for Managed Aquifer Recharge (MAR) projects including planning, design, construction, operation, monitoring, and closure, as well as economic, environmental, and legal considerations. As a technical organization, charged with performing groundbreaking and pathfinding challenges on a daily basis, NASA has long valued the role of its Chief Engineers and Lead Systems Engineers. Although it takes a team to accomplish our missions and no members are unimportant, the Chief Engineers and Lead Systems Engineers who we look to lead our technical teams are critical to the success of our endeavors. It is this corps of dedicated, experienced, and passionate problem solvers and leaders who battle the technical headwinds that face every project, finding often hidden solutions and overcoming seemingly insurmountable obstacles to create paths to success. Furthermore, it is that indomitable spirit of ingenuity and perseverance that defines the Agency. Developing our Chief Engineers and Lead Systems Engineers is a commitment of the NASA engineering community, and one of our tenets for excellence. This development ensures our corps of engineers obtain the depth of technical acumen that they require, first as discipline engineers and then as Chief Engineers and Lead Systems Engineers, but also the associated management skills and experience to ensure they can interact with the rest of the project team and with program, Center, and Agency leadership. What's more, this development also ensures that NASA Chief Engineers and Lead Systems Engineers proficiently serve as leaders of their own technical teams, and that's what this book is all about. These technical leaders are critical to successfully implementing the three safety tenets we inherited from the Apollo program. These include the following: Strong in-line checks and balances. This means that engineers check their fellow engineers, and that no one checks their own homework. 1. Healthy tension between responsible organizations. In NASA today that is the programs and the three Technical Authorities (Engineering, Safety, and Health and Medical). Each organization has to be on equal footing with separate but equal chains of command to allow issues to be raised independently and provide the healthy tension to create organizational checks and balances. 2. "Value-added" independent assessment. "Value-added" means you bring in outside technical experts to peer review critical issues. Having a fresh set of eyes on a problem can provide a different perspective, leverage different experiences and result in more robust solutions. 3. NASA arrived at these three tenets through considerable

blood, sweat, and loss, and our commitment to them is now inscribed in our Agency governance. As Chief Engineers and Lead Systems Engineers, your role in this is paramount, and achieving excellence in this is an expectation of your job. Serving in this role is not an easy task, but it is a tremendously rewarding one. You are the leaders of your technical teams, owners of the technical baseline, standard bearers of engineering best practices, decision makers, risk mitigators and problem solvers. You are Chief Engineers and Lead Systems Engineers, the title of which should say it all.

Joint Volumes of Papers Presented to the Legislative Council and Legislative Assembly

An Advanced Course

Breakthroughs in Research and Practice

Commencement Program

A Manual for the Design and Operation of Sugar Refining Facilities

The Life, Work, and Times of an Electrical Genius of the Victorian Age

A comprehensive text and reference, first published in 2002, on the theory of financial engineering with numerous algorithms for pricing, risk management, and portfolio management.

The author presents a basic introduction to the world of genetic engineering. Copyright © Libri GmbH. All rights reserved.

Density Functional Theory (DFT) has firmly established itself as the workhorse for atomic-level simulations of condensed phases, pure or composite materials and quantum chemical systems. This work offers a rigorous and detailed introduction to the foundations of this theory, up to and including such advanced topics as orbital-dependent functionals as well as both time-dependent and relativistic DFT. Given the many ramifications of contemporary DFT, the text concentrates on the self-contained presentation of the basics of the most widely used DFT variants: this implies a thorough discussion of the corresponding existence theorems and effective single particle equations, as well as of key approximations utilized in implementations. The formal results are complemented by selected quantitative results, which primarily aim at illustrating the strengths and weaknesses of particular approaches or functionals. The structure and content of this book allow a tutorial and modular self-study approach: the reader will find that all concepts of many-body theory which are indispensable for the discussion of DFT - such as the single-particle Green's function or response functions - are introduced step by step, along with the actual DFT material. The same applies to basic notions of solid state theory, such as the Fermi surface of inhomogeneous, interacting systems. In fact, even the language of second quantization is introduced systematically in an Appendix for readers without formal training in many-body theory.

Calendar

Beet and Cane Sugar Manufacture

Report - University of Illinois Board of Trustees

Dr. Deming

Intelligent Transportation and Planning: Breakthroughs in Research and Practice

A Practical Approach to High Power and Single Mode Devices

Urban Drainage has been thoroughly revised and updated to reflect changes in the practice and priorities of urban drainage. New and expanded coverage includes: Sewer flooding The impact of climate change Flooding models The move towards sustainability Providing a descriptive overview of the issues involved as well as the engineering principles and analysis, it draws on real-world examples as well as models to support and demonstrate the key issues facing engineers dealing with drainage issues. It also deals with both the design of new drainage systems and the analysis and upgrading of existing infrastructure. This is a unique and essential textbook for students of water, environmental, and public health engineering as well as a valuable resource for practising engineers.

Practical, Proven Tools for Leading and Empowering High-Performing Agile Teams A leader is like a farmer, who doesn't grow crops by pulling them but instead creates the perfect environment for the crops to grow and thrive. If you lead in organizations that have adopted agile methods, you know it's crucial to create the right environment for your agile teams. Traditional tools such as Gantt charts, detailed plans, and internal KPIs aren't adequate for complex and fast-changing markets, but merely trusting employees and teams to self-manage is insufficient as well. In Agile Leadership Toolkit, longtime agile leader Peter Koning provides a practical and invaluable steering wheel for agile leaders and their teams. Drawing on his extensive experience helping leaders drive more value from agile, Koning offers a comprehensive toolkit for continuously improving your environment, including structures, metrics, meeting techniques, and governance for creating thriving teams that build disruptive products and services. Koning thoughtfully explains how to lead agile teams at large scale and how team members fit into both the team and the wider organization. Architect environments that help teams learn, grow, and flourish for the long term Get timely feedback everyone can use to improve Co-create goals focused on the customer, not the internal organization Help teams brainstorm and visualize the value of their work to the customer Facilitate team ownership and accelerate team learning Support culture change, and design healthier team habits Make bigger changes faster This actionable guide is for leaders at all levels—whether you're supervising your first agile team, responsible for multiple teams, or lead the entire company. Register your book for convenient access to downloads, updates, and/or corrections as they become available. See inside book for details.

Includes various departmental reports and reports of commissions. Cf. Gregory. Serial publications of foreign governments, 1815-1931.

Fire Effects on Soil Properties

Chemical Engineering Design

How Certain Schemes to Improve the Human Condition Have Failed

The South African Sugar Year Book

Three Sigma Leadership

Engineering Rheology

This text is written with a business school orientation, stressing the how to and heavily employing CASE technology throughout. The courses for which this text is appropriate include software engineering, advanced systems analysis, advanced topics in information systems, and

IS project development. Software engineer should be familiar with alternatives, trade-offs and pitfalls of methodologies, technologies, domains, project life cycles, techniques, tools CASE environments, methods for user involvement in application development, software, design, trade-offs for the public domain and project personnel skills. This book discusses much of what should be the ideal software engineer's project related knowledge in order to facilitate and speed the process of novices becoming experts. The goal of this book is to discuss project planning, project life cycles, methodologies, technologies, techniques, tools, languages, testing, ancillary technologies (e.g. database) and CASE. For each topic, alternatives, benefits and disadvantages are discussed.

Acclaimed biography of the pioneer of modern electrical theory featuring a new preface by author. "He was a man who often was incapable of conducting himself properly in the most elementary social interactions. His only continuing contacts with women were limited to his mother, nieces, and housekeepers. He was a man who knew the power of money and desired it, but refused to work for it, preferring to live off the sweat of his family and long-suffering friends, whom he often insulted even as they paid his bills."—Excerpt from the book This, then, was Oliver Heaviside, a pioneer of modern electrical theory. Born into a low social class of Victorian England, Heaviside made advances in mathematics by introducing the operational calculus; in physics, where he formulated the modern-day expressions of Maxwell's Laws of electromagnetism; and in electrical engineering, through his duplex equations. With a new preface by the author, this acclaimed biography will appeal to historians of technology and science, as well as to scientists and engineers who wish to learn more about this remarkable man.

Dynamic programming is a powerful method for solving optimization problems, but has a number of drawbacks that limit its use to solving problems of very low dimension. To overcome these limitations, author Rein Luus suggested using it in an iterative fashion. Although this method required vast computer resources, modifications to his original schem

The New Software Engineering

Density Functional Theory

Principles, Mathematics, Algorithms

Semiconductor Laser Engineering, Reliability and Diagnostics

An Introduction

Mathematical Modeling, Simulation and Optimization for Power

Engineering and Management

This book sets out to provide a guide, with examples, for those who wish to make predictions about the mechanical and thermal behaviour of non-Newtonian materials in engineering and processing technology. After an introductory survey of the field and a review of basic continuum mechanics, the radical differences between elongational and shear behaviour are shown. Two chapters, one based on a continuum approach and the other using microstructural approaches, lead to useful

mathematical descriptions of materials for engineering applications. As examples of nearly-viscometric and nearly-elongational flows, there is a discussion of lubrication and related shearing flows, and fibre- spinning and film-blowing respectively. A long chapter is devoted to the important new field of computational rheology, and this is followed by chapters on stability and turbulence and the all-important temperature effects in flow. This new edition contains much new material not available in book form elsewhere-for example wall slip, suspension rheology, computational rheology and new results in stability theory.

This book provides a reference work on the design and operation of cane sugar manufacturing facilities. It covers cane sugar decolorization, filtration, evaporation and crystallization, centrifugation, drying, and packaging,

Structural Design for Fire Safety, 2nd edition Andrew H. Buchanan, University of Canterbury, New Zealand Anthony K. Abu, University of Canterbury, New Zealand A practical and informative guide to structural fire engineering This book presents a comprehensive overview of structural fire engineering. An update on the first edition, the book describes new developments in the past ten years, including advanced calculation methods and computer programs. Further additions include: calculation methods for membrane action in floor slabs exposed to fires; a chapter on composite steel-concrete construction; and case studies of structural collapses. The book begins with an introduction to fire safety in buildings, from fire growth and development to the devastating effects of severe fires on large building structures. Methods of calculating fire severity and fire resistance are then described in detail, together with both simple and advanced methods for assessing and designing for structural fire safety in buildings constructed from structural steel, reinforced concrete, or structural timber. Structural Design for Fire Safety, 2nd edition bridges the information gap between fire safety engineers, structural engineers and building officials, and it will be useful for many others including architects, code writers, building designers, and firefighters. Key features: • Updated references to current research, as well as new end-of-chapter questions and worked examples. • Authors experienced in teaching, researching, and applying structural fire engineering in real buildings. • A focus on basic principles rather than specific building code requirements, for an international audience. An essential guide for structural engineers who wish to improve their understanding of buildings exposed to severe fires and an ideal textbook for introductory or advanced courses in structural fire engineering.

An Introduction to Genetic Engineering

Oliver Heaviside

Urban Drainage

97 Things Every Cloud Engineer Should Know

Iterative Dynamic Programming

Sugar Technology

Offers a brief profile of the American business consultant who helped develop Japan's successful postwar industry, and explains his points about quality control and management

A sweet tooth is a powerful thing. Babies everywhere seem to smile when tasting sweetness for the first time, a trait inherited, perhaps, from our ancestors who foraged for sweet foods that were generally safer to eat than their bitter counterparts. But the "science of sweet" is only the beginning of a fascinating story, because it is not basic human need or simple biological impulse that prompts us to decorate elaborate wedding cakes, scoop ice cream into a cone, or drop sugar cubes into coffee. These are matters of culture and aesthetics, of history and society, and we might ask many other questions. Why do sweets feature so prominently in children's literature? When was sugar called a spice? And how did chocolate evolve from an ancient drink to a modern candy bar? The Oxford Companion to Sugar and Sweets explores these questions and more through the collective knowledge of 265 expert contributors, from food historians to chemists, restaurateurs to cookbook writers, neuroscientists to pastry chefs. The Companion takes readers around the globe and throughout time, affording glimpses deep into the brain as well as stratospheric flights into the world of sugar-crafted fantasies. More than just a compendium of pastries, candies, ices, preserves, and confections, this reference work reveals how the human proclivity for sweet has brought richness to our language, our art, and, of course, our gastronomy. In nearly 600 entries, beginning with "à la mode" and ending with the Italian trifle known as "zuppa inglese," the Companion traces sugar's journey from a rare luxury to a ubiquitous commodity. In between, readers will learn about numerous sweeteners (as well-known as agave nectar and as obscure as castoreum, or beaver extract), the evolution of the dessert course, the production of chocolate, and the neurological, psychological, and cultural responses to sweetness. The Companion also delves into the darker side of sugar, from its ties to colonialism and slavery to its addictive qualities. Celebrating sugar while acknowledging its complex history, The Oxford Companion to Sugar and Sweets is the definitive guide to one of humankind's greatest sources of pleasure. Like kids in a candy shop, fans of sugar (and aren't we all?) will enjoy perusing the wondrous variety to be found in this volume.

From driverless cars to vehicular networks, recent technological advances are being employed to increase road safety and improve driver satisfaction. As with any newly developed technology, researchers must take care to address all concerns, limitations, and dangers before widespread public adoption. Intelligent Transportation and Planning: Breakthroughs in Research and Practice is an innovative reference source for the latest academic material on the applications, management, and planning of intelligent transportation systems. Highlighting a range of topics, such as automatic control, infrastructure systems, and system architecture, this publication is ideally designed for engineers, academics, professionals, and practitioners actively involved in the transportation planning sector.

Agile Leadership Toolkit

Seeing Like a State

The Corps of Engineers: Troops and Equipment

Transactions of the Board of Trustees

Financial Engineering and Computation

Standard Guidelines for Managed Aquifer Recharge, ASCE/EWRI 69-19

Includes list of retiring faculty and student awards.

If you create, manage, operate, or configure systems running in the cloud, you're a cloud engineer—even if you work as a system administrator, software developer, data scientist, or site reliability engineer. With this book, professionals from around the world provide valuable insight into today's cloud engineering role. These concise articles explore the entire cloud computing experience, including fundamentals, architecture, and migration. You'll delve into security and compliance, operations and reliability, and software development. And examine networking, organizational culture, and more. You're sure to find 1, 2, or 97 things that inspire you to dig deeper and expand your own career. "Three Keys to Making the Right Multicloud Decisions," Brendan O'Leary "Serverless Bad Practices," Manases Jesus Galindo Bello "Failing a Cloud Migration," Lee Atchison "Treat Your Cloud Environment as If It Were On Premises," Iyana Garry "What Is Toil, and Why Are SREs Obsessed with It?", Zachary Nickens "Lean QA: The QA Evolving in the DevOps World," Theresa Neate "How Economies of Scale Work in the Cloud," Jon Moore "The Cloud Is Not About the Cloud," Ken Corless "Data Gravity: The Importance of Data Management in the Cloud," Geoff Hughes "Even in the Cloud, the Network Is the Foundation," David Murray "Cloud Engineering Is About Culture, Not Containers," Holly Cummins
How institutional engineering affects the life of democracies
The Oxford Handbook of Public Policy

Principles, Practice and Economics of Plant and Process Design

Engineering News-record

Reinforcement Learning, second edition

Sugar Journal

“One of the most profound and illuminating studies of this century to have been published in recent decades.”—John Gray, New York Times Book Review Hailed as “a magisterial critique of top-down social planning” by the New York Times, this essential work analyzes disasters from Russia to Tanzania to uncover why states so often fail—sometimes catastrophically—in grand efforts to engineer their society or their environment, and uncovers the conditions common to all such planning disasters. “Beautifully written, this book calls into sharp relief the nature of the world we now inhabit.”—New Yorker “A tour de force.”— Charles Tilly, Columbia University