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Algorithms in Java, Parts 1-4 - Robert Sedgewick
2002-07-23

This edition of Robert Sedgewick's popular work provides current and comprehensive coverage of important algorithms for Java programmers. Michael Schidlowsky and Sedgewick have developed new Java implementations that both express the methods in a concise and direct manner and provide programmers with the practical means to test them on real applications. Many new algorithms are presented, and the explanations of each algorithm are much more detailed than in previous editions. A new text design and detailed, innovative figures, with accompanying commentary, greatly enhance the presentation. The third edition retains the successful blend of theory and practice that has made Sedgewick's work an invaluable resource for more than 400,000 programmers! This particular book, Parts 1-4 , represents the essential first half of Sedgewick's complete work. It provides extensive coverage of fundamental data structures and algorithms for sorting, searching, and related applications. Although the substance of the book applies to programming in any language, the implementations by Schidlowsky and Sedgewick also exploit the natural match between Java classes and abstract data type (ADT) implementations. Highlights Java class implementations of more than 100 important practical algorithms Emphasis on ADTs, modular programming, and object-oriented programming Extensive coverage of arrays, linked lists, trees,

and other fundamental data structures Thorough treatment of algorithms for sorting, selection, priority queue ADT implementations, and symbol table ADT implementations (search algorithms) Complete implementations for binomial queues, multiway radix sorting, randomized BSTs, splay trees, skip lists, multiway tries, B trees, extendible hashing, and many other advanced methods Quantitative information about the algorithms that gives you a basis for comparing them More than 1,000 exercises and more than 250 detailed figures to help you learn properties of the algorithms Whether you are learning the algorithms for the first time or wish to have up-to-date reference material that incorporates new programming styles with classic and new algorithms, you will find a wealth of useful information in this book.

Giant Earth-moving Equipment - Eric C. Orlemann 1995

Covers the 1950s through the present.

Uncertainty in Mechanical Engineering - Peter F. Pelz 2021-05-26

This open access book reports on methods and technologies to describe, evaluate and control uncertainty in mechanical engineering applications. It brings together contributions by engineers, mathematicians and legal experts, offering a multidisciplinary perspective on the main issues affecting uncertainty throughout the complete system lifetime, which includes process and product planning, development, production and usage. The book is based on the proceedings of the 4th International Conference

on Uncertainty in Mechanical Engineering (ICUME 2021), organized by the Collaborative Research Center (CRC) 805 of the TU Darmstadt, and held online on June 7–8, 2021. All in all, it offers a timely resource for researchers, graduate students and practitioners in the field of mechanical engineering, production engineering and engineering optimization.

Scheduling Algorithms - Peter Brucker
2013-04-17

Besides scheduling problems for single and parallel machines and shop scheduling problems, the book covers advanced models involving due-dates, sequence dependent change-over times and batching. A discussion of multiprocessor task scheduling and problems with multi-purpose machines is accompanied by the methods used to solve such problems, such as polynomial algorithms, dynamic programming procedures, branch-and-bound algorithms and local search heuristics, and the whole is rounded off with an analysis of complexity issues.

Knowledge Management - Ikujiro Nonaka 2005

Mathematics in Berlin - Heinrich Begehr
2012-12-06

This little book is conceived as a service to mathematicians attending the 1998 International Congress of Mathematicians in Berlin. It presents a comprehensive, condensed overview of mathematical activity in Berlin, from Leibniz almost to the present day (without, however, including biographies of living mathematicians). Since many towering figures in mathematical history worked in Berlin, most of the chapters of this book are concise biographies. These are held together by a few survey articles presenting the overall development of entire periods of scientific life at Berlin. Overlaps between various chapters and differences in style between the chapters were inevitable, but sometimes this provided opportunities to show different aspects of a single historical event - for instance, the Kronecker-Weierstrass controversy. The book aims at readability rather than scholarly completeness. There are no footnotes, only references to the individual bibliographies of each chapter. Still, we do hope that the texts brought together here, and written by the various authors for this volume, constitute

a solid introduction to the history of Berlin mathematics.

Materials Data for Cyclic Loading - Chr Boller
1987

Based on the author's lecture notes for a course on Physical Chemistry of Oxides at High Temperatures held at the Graduate School of the Tokyo Institute of Technology, this book examines the micromechanism of migration of ions and electronic defects contained in solid and liquid oxides at high temperature. The book is primarily designed for use as a graduate-level text and includes 150 problems for students. The emphasis is on introduction of simple theories for transport properties of oxides, which can be universally used at low and high temperatures, for various combinations of oxides.

Giant Earthmovers - Keith Haddock 1998

A comprehensive review of earthmoving and construction equipment from the birth of primitive industrial tools to today's awe-inspiring machines! The biggest haulers, dozers, scrapers and unusual specialty equipment in the field are presented here in over 500 black-and-white photographs. The author's expertly written text details machine categories and discusses the history, evolution, design and manufacture of these industry giants. Packed full of top-quality archival photographs, most taken from manufacturer archives.

Knowledge Management Foundations - Karl M. Wiig 1993-01-01

Om viden/lærdom og formidlingen af den, også i virksomheder.

Whiplash Injury - Andreas Otte 2012-03-19

In the past two decades much has been published on whiplash injury, yet both the confusion regarding the condition and the medicolegal discussion surrounding it have increased. In this scenario, a guide to recent and current international research in the field is more necessary than ever. Especially functional imaging methods - such as single-photon emission tomography, positron emission tomography, functional MRI, and hybrid techniques - have demonstrated a variety of significant brain alterations. This book accordingly offers a critical approach to the challenging interpretation of the new research data obtained using functional neuroimaging in whiplash injury. It covers all aspects, including

the imaging tools themselves and the different methods of image analysis. Whiplash Injury: New Methods of Functional Neuroimaging will hopefully help patients, their relatives and friends, physicians, and others to understand this condition as a disease.

Handbook of Acoustic Emission - Sonny Lin
2015-01-09

The aim of this book is to provide state-of-the-art information regarding the concept of Acoustic Emission (AE). AE is a significant and non-harmful testing procedure for substances, constructions and machines. It is defined as the transient elastic energy that is spontaneously released when substances undergo deformation, fracture or both. It presents significant applications of AE procedure like the evaluation of machinery and civil structures condition, fatigue and fracture substances research, detection of substance defects and deformities, monitoring of stress and ageing in substances, chemical reactions and phase transitions research, and earthquake prediction.

P2P 2001 - Ross Lee Graham 2002

Metal Forming Practise - Heinz Tschätsch
2007-05-17

This sourcebook presents the most important metal-working and shearing processes - and their related machines and tooling - in a concise form supplemented by ample illustrations, tables and flow charts. Practical examples show how to calculate forces and strain energy of the processes and the specific parameters of the machines, and exercises help readers improve understanding. Because much production today is automated using modern Computer Numerical Control engineering, the book covers automated flexible metal forming and handling systems. Carefully translated from the eighth revised German-language edition, Metal Forming Practise offers a valuable reference tool for students, engineers and technicians.

Accelerated Testing and Validation - Alex Porter 2004-07-01

Accelerated Testing and Validation Methods is a cross-disciplinary guide that describes testing and validation tools and techniques throughout the product development process. Alex Porter not only focuses on what information is needed but also on what tools can produce the

information in a timely manner. From the information provided, engineers and managers can determine what data is needed from a test and validation program and then how to select the best, most effective methods for obtaining the data. This book integrates testing and validation methods with a business perspective so readers can understand when, where, and how such methods can be economically justified. Testing and validation is about generating key information at the correct time so that sound business and engineering decisions can be made. Rather than simply describing various testing and validation techniques, the author offers readers guidance on how to select the best tools for a particular need, explains the appropriateness of different techniques to various situations and shows how to deploy them to ensure the desired information is accurately gathered. Emphasizes developing a strategy for testing and validation Teaches how to design a testing and validation program that deliver information in a timely and cost-effective manner

Efficient and Robust Pose Estimation Based on Inertial and Visual Sensing - Elmar Mair
2012

The Matrix Eigenvalue Problem - David S. Watkins 2007-01-01

An in-depth, theoretical discussion of the two most important classes of algorithms for solving matrix eigenvalue problems.

60 Excellent Inventions in Metal Forming - A. Erman Tekkaya 2015-05-04

60 novel approaches in metal forming are presented and explained in detail. Contributions from acknowledged international scientists representing the state-of-art in metal forming open a general view on recent results and a clear view on demands for new research initiatives.

An Introduction to Iterative Toeplitz Solvers - Raymond Hon-Fu Chan 2007-01-01

Toeplitz systems arise in a variety of applications in mathematics, scientific computing, and engineering, including numerical partial and ordinary differential equations, numerical solutions of convolution-type integral equations, stationary autoregressive time series in statistics, minimal realization problems in

control theory, system identification problems in signal processing, and image restoration problems in image processing.

Umformtechnik multimedial - Josef Reissner 2009

Lokales Laserumschmelzverfestigen von crashbelasteten

Karosserieblechstrukturen. - Markus Wagner 2022-09-07

Crashbelastungen führen bei Karosseriebauteilen in der Regel zu ausgeprägt inhomogenen Bauteilbeanspruchungen. Mit den aktuellen Karosserieleichtbaulösungen können die mechanischen Eigenschaften von Crashstrukturen nicht oder nur sehr begrenzt an die spezifischen Beanspruchungszustände angepasst werden. Das Verfahren des lokalen Laserumschmelzverfestigens ermöglicht hingegen eine beanspruchungsgerechte Abstimmung der Bauteileigenschaften von crashbelasteten Karosseriebauteilen aus härteren Stählen. Im Ergebnis kann eine signifikante Verbesserung der Crashbelastbarkeit und Bauteilumformbarkeit erzielt werden, sofern lokalisierte plastische Bauteilverformungen auftreten. Die für eine FE-basierte Bauteilauslegung erforderlichen Eigenschaften der Verfestigungszonen können über die vorgeschlagenen analytischen Zusammenhänge aus den spezifischen Werkstoff- und Prozessparametern berechnet werden. Zur Verbesserung definierter Bauteileigenschaften in praktischen Anwendungen werden iterative heuristikbasierte Herangehensweisen vorgestellt. Das hohe Anwendungspotenzial des Verfahrens für Karosserieleichtbaulösungen wird anhand praxisrelevanter Applikationsbeispiele aufgezeigt.

Splinefunktionen - Carl de Boor 2012-12-06
Der Begriff der Splinefunktionen wurde von I.J. Schoenberg 1946 eingeführt. "Spline" ist der Name eines Zeichengerates, welches auf mechanischem Weg Interpolationsaufgaben löst. Dieses Gerät besteht aus einer flexiblen, oft mehrere Meter langen Latte, die auf dem Zeichenbrett aufliegt und dort an bestimmten Stellen durch Gewichte festgehalten wird. Die Form, die die Latte annimmt, hängt von den

Elastizitätseigenschaften der Latte ab. Fig. 1: Latteninterpolation Polynominterpolation
Wir können natürlich versuchen, ein mathematisches Modell für dieses mechanische Zeichengerät zu machen, d. h. die Gestalt solcher Kurven mathematisch zu erfassen. Die Theorie der Balkenbiegung verlangt, dass die mittlere quadratische Krümmung, ("strain energy", Spannungs-Energie) minimiert wird. Lässt sich die Kurve als Graph einer Funktion f auf dem Intervall $[a, b]$ schreiben, so erhält man mit dem bekannten Ausdruck für die Krümmung $K[f](t) = \sqrt{1 + f'(t)^2}$ ein Extremalproblem zu lösen, beginnt man sich damit, (2) zu minimieren. Die Extremalfunktion für das Funktional (2) ist stückweise ein kubisches Polynom; die Stücke gehen an den Bruchstellen so glatt ineinander über, dass die Funktion zweimal stetig differenzierbar ist. *Handbook of Energy Storage* - Michael Sterner 2019-09-27

The authors of this Handbook offer a comprehensive overview of the various aspects of energy storage. After explaining the importance and role of energy storage, they discuss the need for energy storage solutions with regard to providing electrical power, heat and fuel in light of the Energy Transition. The book's main section presents various storage technologies in detail and weighs their respective advantages and disadvantages. Sections on sample practical applications and the integration of storage solutions across all energy sectors round out the book. A wealth of graphics and examples illustrate the broad field of energy storage, and are also available online. The book is based on the 2nd edition of the very successful German book *Energiespeicher*. It features a new chapter on legal considerations, new studies on storage needs, addresses Power-to-X for the chemical industry, new Liquid Organic Hydrogen Carriers (LOHC) and potential-energy storage, and highlights the latest cost trends and battery applications. "Finally - a comprehensive book on the Energy Transition that is written in a style accessible to and inspiring for non-experts." Franz Alt, journalist and book author "I can recommend this outstanding book to anyone who is truly

interested in the future of our country. It strikingly shows: it won't be easy, but we can do it." Prof. Dr. Harald Lesch, physicist and television host

Drive Solutions - Edwin Kiel 2008-01-10

Highly automated production and logistics facilities require mechatronic drive solutions. This book describes in which way the industrial production and logistics work and shows the structure of the drive solutions required for this purpose. The functionality of the mechanical and electronic elements of a drive system is described, and their basic dimensioning principles are explained. The authors also outline the engineering, reliability, and important aspects of the life cycle.

Resin Transfer Moulding for Aerospace Structures

- T. Kruckenberg 2012-12-06

Resin Transfer Moulding and other similar 'liquid moulding' manufacturing methods have been used to make non-structural composites for the last 35 years. However, in the last eight years these methods have become the subject of enormous interest by aerospace manufacturing companies. Resin Transfer Moulding for Aerospace Structures describes all aspects of Resin Transfer Moulding (RTM) for aerospace structures. Written by an international team of experts, from both industry and academia, it is a comprehensive work providing complete and detailed information on the process of RTM from theoretical modelling to practical experience. With subjects including manufacturing, tooling, fabric design and flow modelling all covered, this book is an invaluable up-to-the-minute reference source which provides the reader with a good understanding of RTM and its possible uses, especially for high performance applications. Resin Transfer Moulding for Aerospace Structures is an ideal guide for those in the aerospace and related industries, who want to understand and utilize RTM, as well as those directly involved in the RTM industry.

Learning UML 2.0 - Russ Miles 2006-04-25

With its clear introduction to the Unified Modeling Language (UML) 2.0, this tutorial offers a solid understanding of each topic, covering foundational concepts of object-orientation and an introduction to each of the UML diagram types.

Modern Surface Technology - Friedrich-

Wilhelm Bach 2006-12-13

This translation of a successful German title provides a broad and fundamental overview of current coating technology. Edited by experts from one of the largest research centers for this field in Germany, this valuable reference combines research and industrial perspectives, treated by authors from academia and industry alike. They discuss the potential of the many innovations introduced into industrial application in recent years, allowing materials scientists and engineers to find the appropriate solution for their own specific coating problems. Thus, with the aid of this book, it is possible to make coating technology an integral part of R&D, construction and production.

Brazing, high temperature brazing and diffusion bonding : LÖT 2013 ; lectures and posters of the 10. international conference taking place in Aachen on 18th to 20th June 2013 - LÖT 2013

Key Issues in the New Knowledge

Management - Joseph M. Firestone 2012-06-25

In 'Key Issues in the New Knowledge Management,' Firestone and McElroy, the architects of the New Knowledge Management (TNKM) provide an in-depth analysis of the most important issues in the field of Knowledge Management. The issues the book addresses are central in the field today: * The Knowledge Wars, or the issue of "how you define knowledge determines how you manage it" * The nature of knowledge processing * Information management or knowledge management? * Three views on the evolution of knowledge management * The role of knowledge claim evaluation in knowledge processing, or the difference between opinion, judgements, information, data, and real knowledge in knowledge management systems * Is culture a barrier in knowledge management? * The Open Enterprise and accelerated sustainable innovation * Portals * How should one evaluate KM software? * Intellectual Capital * Measuring the impact of KM initiatives on the organization and the bottom line * KM and terrorism

B for Business - William Cullen 2000

Augmented Reality - Jon Peddie 2017-04-19

This book provides an in-depth exploration of the field of augmented reality (AR) in its entirety and

sets out to distinguish AR from other inter-related technologies like virtual reality (VR) and mixed reality (MR). The author presents AR from its initial philosophies and early developments, to its current technologies and its impact on our modern society, to its possible future developments; providing readers with the tools to understand issues relating to defining, building, and using our perception of what is represented in our perceived reality, and ultimately how we assimilate and react to this information. *Augmented Reality: Where We Will All Live* can be used as a comprehensive guide to the field of AR and provides valuable insights for technologists, marketers, business managers, educators and academics who are interested in the field of augmented reality; its concepts, history, practices and the science behind this rapidly advancing field of research and development.

Middleware for Network Eccentric and Mobile Applications - Benoît Garbinato 2009-02-07
Middleware is a critical foundation needed to leverage the development of a wide range of mobile and ubiquitous applications. Intrinsic challenges when building such middleware require the combination of expertise from areas like distributed systems, networking, software engineering, and application development. This textbook provides a comprehensive introduction to the main fundamental problems, technologies, paradigms, and solutions of concern to developers of middleware for mobile environments. The contributions are grouped into four parts, on networking and programming issues, communication models, middleware issues, and application issues. Each chapter is structured as a self-contained tutorial, presenting an overview of a specific topic and the state-of-the-art solutions for the related problems. In addition, the book also includes an authoritative reference list. The material has been successfully used in several thematic training schools organized by the ESF MiNEMA (Middleware for Network Eccentric and Mobile Applications) program, and the book's organization and presentation is ideal for an advanced course on middleware.

Cyber-Physical and Gentelligent Systems in Manufacturing and Life Cycle - Berend Denkena 2017-06-07

Cyber-Physical and Gentelligent Systems in Manufacturing and Life Cycle explores the latest technologies resulting from the integration of sensing components throughout the production supply chain, and the resulting possibilities to improve efficiency, flexibility, and product quality. The authors present cutting edge research into data storage in components, communication devices, data acquisition, as well as new industrial applications. Detailed technical descriptions of the tools are presented in addition to discussions of how these systems have been used, the benefits they provide, and what industry problems they could tackle in the future. This is essential reading for researchers and production engineers interested in the potential of cyber physical systems to optimize all parts of the supply chain. Addresses applications of cyber physical systems throughout the product lifecycle, including design, manufacture, and maintenance Features five industry case studies examining tools in different stages of the production chain Provides an invaluable recap of 12 years of advances in digitization of production processes and the implementation of intelligent systems Explores how these technologies could be used to solve problems in the future

Soft Solders - 1949

Eddy current testing - V. S. Cecco 1987-01-01

Metal Forming Handbook - Schuler GmbH 2012-12-06

Following the long tradition of the Schuler Company, the Metal Forming Handbook presents the scientific fundamentals of metal forming technology in a way which is both compact and easily understood. Thus, this book makes the theory and practice of this field accessible to teaching and practical implementation. The first Schuler "Metal Forming Handbook" was published in 1930. The last edition of 1966, already revised four times, was translated into a number of languages, and met with resounding approval around the globe. Over the last 30 years, the field of forming technology has been radically changed by a number of innovations. New forming techniques and extended product design possibilities have been developed and introduced. This Metal

Forming Handbook has been fundamentally revised to take account of these technological changes. It is both a text book and a reference work whose initial chapters are concerned to provide a survey of the fundamental processes of forming technology and press design. The book then goes on to provide an in-depth study of the major fields of sheet metal forming, cutting, hydroforming and solid forming. A large number of relevant calculations offers state of the art solutions in the field of metal forming technology. In presenting technical explanations, particular emphasis was placed on easily understandable graphic visualization. All illustrations and diagrams were compiled using a standardized system of functionally oriented color codes with a view to aiding the reader's understanding.

Adaptive Control - Karl J. Åström 2013-04-26
Suitable for advanced undergraduates and graduate students, this overview introduces theoretical and practical aspects of adaptive control, with emphasis on deterministic and stochastic viewpoints. 1995 edition.

Sheet Metal 2009 - Bez Shirvani 2009-03-02
Volume is indexed by Thomson Reuters CPCI-S (WoS). Collections of peer-reviewed papers are always excellent sources of knowledge and new ideas for researchers working in both universities and industry. The present collection, in particular, provides interdisciplinary and international resources; thus encouraging the close cooperation of materials scientists, and manufacturing and computer engineers and promoting the diffusion of research results, and technology transfer, in all areas of Sheet Metal Processing and Characterization.

Source Book on Cold Forming - American Society for Metals 1975

Agonistic Articulations in the 'Creative' City - Friederike Landau 2019-03-07

This book offers an empirically-grounded account of the emergence and political activities of a new collective actor in Berlin's art field. Investigating the organizational and representative practices of Koalition der Freien Szene (Coalition of the Independent Scene) - a trans-disciplinary action platform assembling a wide variety of cultural producers in Berlin - the

author unpacks the political organization of one of the most compelling contemporary art scenes, or 'creative' cities, worldwide, analysing both its concrete policy 'success' and the means by which it seeks to challenge and rearticulate the meaning of Berlin as a 'creative' city from the producers' point of view. The book thus opens new opportunities for long-term transformations of the cultural political field. Theoretically sophisticated and based on empirical material including interviews with spokespeople and cultural administrators, *Agonistic Articulations in the 'Creative' City* presents a unique conceptualization of new modes of political collectivization, representation and legitimacy that imagine new avenues of political engagement at a time when political institutions, parties and regimes of representation are in crisis. As such, it will appeal to scholars of sociology, political science and urban studies with interests in social movements and cultural activism.

Production at the leading edge of technology - Bernd-Arno Behrens 2021-09-27

This congress proceedings provides recent research on leading-edge manufacturing processes. The aim of this scientific congress is to work out diverse individual solutions of "production in the border area" and transferable methodological approaches. In addition, guest speakers with different backgrounds will give the congress participants food for thoughts, interpretations, views and suggestions. The manufacturing industry is currently undergoing a profound structural change, which on the one hand produces innovative solutions through the use of high-performance communication and information technology, and on the other hand is driven by new requirements for goods, especially in the mobility and energy sector. With the social discourse on how we should live and act primarily according to guidelines of sustainability, structural change is gaining increasing dynamic. It is essential to translate politically specified sustainability goals into socially accepted and marketable technical solutions. Production research is meeting this challenge and will make important contributions and provide innovative solutions from different perspectives.