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KEY=MATEMATICA - HOLT BRAIDEN

NUMERICAL MATHEMATICS

Springer The purpose of this book is to provide the mathematical foundations of numerical methods, to analyze their basic theoretical properties and to demonstrate their performances on examples and counterexamples. Within any specific class of problems, the most appropriate scientific computing algorithms are reviewed, their theoretical analyses are carried out and the expected results are verified using the MATLAB software environment. Each chapter contains examples, exercises and applications of the theory discussed to the solution of real-life problems. While addressed to senior undergraduates and graduates in engineering, mathematics, physics and computer sciences, this text is also valuable for researchers and users of scientific computing in a large variety of professional fields.

CURVES AND SURFACES

Springer Science & Business Media The book provides an introduction to Differential Geometry of Curves and Surfaces. The theory of curves starts with a discussion of possible definitions of the concept of curve, proving in particular the classification of 1-dimensional manifolds. We then present the classical local theory of parametrized plane and space curves (curves in n-dimensional space are discussed in the complementary material): curvature, torsion, Frenet's formulas and the fundamental theorem of the local theory of curves. Then, after a self-contained presentation of degree theory for continuous self-maps of the circumference, we study the global theory of plane curves, introducing winding and rotation numbers, and proving the Jordan curve theorem for curves of class C^2 , and Hopf theorem on the rotation number of closed simple curves. The local theory of surfaces begins with a comparison of the concept of parametrized (i.e., immersed) surface with the concept

of regular (i.e., embedded) surface. We then develop the basic differential geometry of surfaces in R^3 : definitions, examples, differentiable maps and functions, tangent vectors (presented both as vectors tangent to curves in the surface and as derivations on germs of differentiable functions; we shall consistently use both approaches in the whole book) and orientation. Next we study the several notions of curvature on a surface, stressing both the geometrical meaning of the objects introduced and the algebraic/analytical methods needed to study them via the Gauss map, up to the proof of Gauss' Teorema Egregium. Then we introduce vector fields on a surface (flow, first integrals, integral curves) and geodesics (definition, basic properties, geodesic curvature, and, in the complementary material, a full proof of minimizing properties of geodesics and of the Hopf-Rinow theorem for surfaces). Then we shall present a proof of the celebrated Gauss-Bonnet theorem, both in its local and in its global form, using basic properties (fully proved in the complementary material) of triangulations of surfaces. As an application, we shall prove the Poincaré-Hopf theorem on zeroes of vector fields. Finally, the last chapter will be devoted to several important results on the global theory of surfaces, like for instance the characterization of surfaces with constant Gaussian curvature, and the orientability of compact surfaces in R^3 .

SCIENTIFIC COMPUTING WITH MATLAB AND OCTAVE

Springer Science & Business Media Preface to the First Edition This textbook is an introduction to Scientific Computing. We will illustrate several numerical methods for the computer solution of certain classes of mathematical problems that cannot be faced by paper and pencil. We will show how to compute the zeros or the integrals of continuous functions, solve linear systems, approximate functions by polynomials and construct accurate approximations for the solution of differential equations. With this aim, in Chapter 1 we will illustrate the rules of the game that computers adopt when storing and operating with real and complex numbers, vectors and matrices. In order to make our presentation concrete and appealing we will adopt the programming environment MATLAB as a faithful companion. We will gradually discover its principal commands, statements and constructs. We will show how to execute all the algorithms that we introduce throughout the book. This will enable us to furnish an immediate quantitative assessment of their theoretical properties such as stability, accuracy and complexity. We will solve several problems that will be raised through exercises and examples, often stemming from scientific applications.

GROUPS

AN INTRODUCTION TO IDEAS AND METHODS OF THE THEORY OF GROUPS

Springer Science & Business Media Groups are a means of classification, via the group action on a set, but also the object of a classification. How many groups of a given type are there, and how can they be described? Hölder's program for attacking this problem in the case of finite groups is a sort of leitmotiv throughout the text.

Infinite groups are also considered, with particular attention to logical and decision problems. Abelian, nilpotent and solvable groups are studied both in the finite and infinite case. Permutation groups are treated in detail; their relationship with Galois theory is often taken into account. The last two chapters deal with the representation theory of finite group and the cohomology theory of groups; the latter with special emphasis on the extension problem. The sections are followed by exercises; hints to the solution are given, and for most of them a complete solution is provided.

A TEXTBOOK ON ORDINARY DIFFERENTIAL EQUATIONS

Springer This book offers readers a primer on the theory and applications of Ordinary Differential Equations. The style used is simple, yet thorough and rigorous. Each chapter ends with a broad set of exercises that range from the routine to the more challenging and thought-provoking. Solutions to selected exercises can be found at the end of the book. The book contains many interesting examples on topics such as electric circuits, the pendulum equation, the logistic equation, the Lotka-Volterra system, the Laplace Transform, etc., which introduce students to a number of interesting aspects of the theory and applications. The work is mainly intended for students of Mathematics, Physics, Engineering, Computer Science and other areas of the natural and social sciences that use ordinary differential equations, and who have a firm grasp of Calculus and a minimal understanding of the basic concepts used in Linear Algebra. It also studies a few more advanced topics, such as Stability Theory and Boundary Value Problems, which may be suitable for more advanced undergraduate or first-year graduate students. The second edition has been revised to correct minor errata, and features a number of carefully selected new exercises, together with more detailed explanations of some of the topics. A complete Solutions Manual, containing solutions to all the exercises published in the book, is available. Instructors who wish to adopt the book may request the manual by writing directly to one of the authors.

MATEMATICA NUMERICA ESERCIZI, LABORATORI E PROGETTI

Springer La Matematica Numerica una disciplina che si sviluppa in simbiosi con il calcolatore; essa fa uso di linguaggi di programmazione che consentono di tradurre gli algoritmi in programmi eseguibili. Questo testo si propone di aiutare lo studente nella transizione fra i concetti teorici e metodologici della Matematica Numerica e la loro implementazione al computer. A questo scopo vengono proposti Esercizi teorici da risolvere con carta e penna atti a far comprendere meglio al lettore la teoria, e Laboratori, in cui per un dato problema si debbono scegliere gli algoritmi pi adatti, realizzare un programma in linguaggio MATLAB per la loro implementazione, rappresentare graficamente in maniera idonea i risultati ottenuti dal calcolatore, infine interpretarli ed analizzarli alla luce della teoria. Per ogni Esercizio ed ogni Laboratorio si presenta una risoluzione dettagliata, completata da una ampia discussione critica. Per una migliore fruizione degli argomenti sviluppati, il testo si apre con una introduzione all'ambiente di programmazione MATLAB. Il testo contiene infine alcuni Progetti. Il primo concerne gli algoritmi di page ranking dei moderni

motori di ricerca, il secondo la determinazione del campo elettrico fra due conduttori e il calcolo della capacità di un condensatore, il terzo lo studio di sistemi dinamici oscillanti di grande rilevanza in applicazioni elettroniche e biologiche. Il testo rivolto a studenti dei corsi di laurea in Matematica, Ingegneria, Fisica e Informatica. La seconda edizione stata arricchita con numerosi nuovi Esercizi e Progetti.

LINEAR ALGEBRA FOR EVERYONE

Springer Science & Business Media This book provides students with the rudiments of Linear Algebra, a fundamental subject for students in all areas of science and technology. The book would also be good for statistics students studying linear algebra. It is the translation of a successful textbook currently being used in Italy. The author is a mathematician sensitive to the needs of a general audience. In addition to introducing fundamental ideas in Linear Algebra through a wide variety of interesting examples, the book also discusses topics not usually covered in an elementary text (e.g. the "cost" of operations, generalized inverses, approximate solutions). The challenge is to show why the "everyone" in the title can find Linear Algebra useful and easy to learn. The translation has been prepared by a native English speaking mathematician, Professor Anthony V. Geramita.

MATEMATICA NUMERICA

Springer La Matematica Numerica è elemento fondante del calcolo scientifico. Punto di contatto di diverse discipline nella matematica e nelle moderne scienze applicate, ne diventa strumento di indagine qualitativa e quantitativa. Scopo di questo testo è fornire i fondamenti metodologici della matematica numerica, richiamandone le principali proprietà, quali la stabilità, l'accuratezza e la complessità algoritmica. Nel contesto di ogni specifica classe di problemi vengono illustrati gli algoritmi più idonei, ne viene fatta l'analisi teorica e se ne verificano i risultati previsti implementandoli con l'ausilio di programmi in linguaggio MATLAB. Ogni capitolo è integrato da esercizi e temi svolti, questi ultimi corredati da programmi MATLAB. Il volume è indirizzato principalmente agli studenti delle facoltà scientifiche, con particolare attenzione ai corsi di laurea in Ingegneria, Matematica e Scienze dell'Informazione. L'enfasi posta sullo sviluppo di software lo rende interessante anche per ricercatori e utilizzatori delle tecniche del calcolo scientifico nei campi professionali più disparati. La quarta edizione contiene numerose integrazioni in quasi tutti i capitoli. Diverse sezioni sono inoltre state rivisitate con lo scopo di rendere più chiari concetti ed argomenti di considerevole complessità.

DATA SCIENCE FROM SCRATCH

FIRST PRINCIPLES WITH PYTHON

"O'Reilly Media, Inc." Data science libraries, frameworks, modules, and toolkits are great for doing data science, but they're also a good way to dive into the discipline without actually understanding data science. In this book, you'll learn how many of the most fundamental data science tools and algorithms work by implementing them from scratch. If you have an aptitude for mathematics and some programming skills,

author Joel Grus will help you get comfortable with the math and statistics at the core of data science, and with hacking skills you need to get started as a data scientist. Today's messy glut of data holds answers to questions no one's even thought to ask. This book provides you with the know-how to dig those answers out. Get a crash course in Python Learn the basics of linear algebra, statistics, and probability—and understand how and when they're used in data science Collect, explore, clean, munge, and manipulate data Dive into the fundamentals of machine learning Implement models such as *k*-nearest Neighbors, Naive Bayes, linear and logistic regression, decision trees, neural networks, and clustering Explore recommender systems, natural language processing, network analysis, MapReduce, and databases

MATHEMATICAL ANALYSIS TOOLS FOR ENGINEERING

Società Editrice Esculapio This book is an introduction to the study of ordinary differential equations and partial differential equations, ranging from elementary techniques to advanced tools. The presentation focusses on initial value problems, boundary value problems, equations with delayed argument and analysis of periodic solutions: main goals are the analysis of diffusion equation, wave equation, Laplace equation and signals. The study of relevant examples of differential models highlights the notion of well-posed problem. An expanded tutorial chapter collects the topics from basic undergraduate calculus that are used in subsequent chapters. A wide exposition concerning classical methods for solving problems related to differential equations is available: mainly separation of variables and Fourier series, with basic worked exercises. A whole chapter deals with the analytic functions of complex variable. An introduction to function spaces, distributions and basic notions of functional analysis is present. Several chapters are devoted to Fourier and Laplace transforms methods to solve boundary value problems and initial value problems for differential equations. Tools for the analysis appear gradually: first in function spaces, then in the more general framework of distributions, where a powerful arsenal of techniques allows dealing with impulsive signals and singularities in both data and solutions of differential problems. This Second Edition contains additional exercises and a new chapter concerning signals and filters analysis in connection to integral transforms.

A MATEMÁTICA PODE SER INTERESSANTE... E LINDA! ESPIRAIS, FIBONACCI, RAZÃO ÁUREA, CRESCIMENTO PROPORCIONAL E A NATUREZA

Editora Blucher O principal obstáculo com que se defronta um professor de matemática em sua labuta, em qualquer nível, é uma visão preconceituosa a respeito da disciplina, considerada uma matéria difícil, quase sempre excessivamente técnica, que exige uma vocação especial, ou uma competência inata para a compreensão de seus objetos, de suas ideias. Na verdade, como conteúdo da escola básica, fundamental para a formação da cidadania, a matemática pode e deve ser bem compreendida por todos. Para que isto se dê, não se pode, no entanto, prescindir de um professor inspirado e inspirador, que conheça

profundamente os conteúdos a serem ensinados e saiba escolher centros de interesses adequados para, por meio deles, apresentar de maneira articulada as ideias fundamentais da disciplina. Tais requisitos são plenamente contemplados neste livro exemplar. O entusiasmo do autor, um professor de mão cheia, com vasta experiência no ensino de ciência da computação e matemática, é patente da primeira à última página do livro. Não por acaso, a competência do docente o fez escolher um centro de interesse especialmente fecundo: a zona de confluência entre a matemática e a estética propiciada pela razão áurea e todas as estripulias de Fibonacci, na exploração das interessantes propriedades do número ϕ . Finalmente, de posse de tão rico tema, o autor soube articular elementos e ideias fundamentais interessantes, não se deixando desviar por curiosidades menos relevantes. O resultado, ao final da obra, é um texto extremamente rico, que certamente vai encantar os leitores de todos os níveis de ensino, contaminando-os com o entusiasmo, a competência e o discernimento do autor. Eis aqui um livro imperdível. Nilson J. Machado, Professor Titular da Faculdade de Educação da USP

ORDINARY DIFFERENTIAL EQUATIONS IN RN

PROBLEMS AND METHODS

Springer Science & Business Media During the fifties, one of the authors, G. Stampacchia, had prepared some lecture notes on ordinary differential equations for a course in ad analysis. These remained for a long time unused because he was no vanced longer very interested in the study of such equations. We now see, though, that numerous applications to biology, chemistry, economics, and medicine have recently been added to the traditional ones in mechanics; also, there has been in these last years a reemergence of interest in nonlinear analy sis, of which the theory of ordinary differential euqations is one of the principal sources of methods and problems. Hence the idea to write a book. Our text, based on the old notes and experience gained in many courses, seminars, and conferences, both in Italy and abroad, aims to give a simple and rapid introduction to the various themes, problems, and methods of the theory of ordinary differential equations. The book has been conceived in such a way so that even the reader who has merely had a first course in calculus may be able to study it and to obtain a panoramic vision of the theory. We have tried to avoid abstract formalism, preferring instead a discursive style, which should make the book accessible to engineers and physicists without specific preparation in modern mathematics. For students of mathematics, it provides motivation for the subject of more advanced analysis courses.

RANDOM POLYNOMIALS

PROBABILITY AND MATHEMATICAL STATISTICS: A SERIES OF MONOGRAPHS AND TEXTBOOKS

Academic Press Probability and Mathematical Statistics: A Series of Monographs and Textbooks: Random Polynomials focuses on a comprehensive treatment of random algebraic, orthogonal, and trigonometric polynomials. The publication first offers information on the basic definitions and properties of random algebraic polynomials

and random matrices. Discussions focus on Newton's formula for random algebraic polynomials, random characteristic polynomials, measurability of the zeros of a random algebraic polynomial, and random power series and random algebraic polynomials. The text then elaborates on the number and expected number of real zeros of random algebraic polynomials; number and expected number of real zeros of other random polynomials; and variance of the number of real zeros of random algebraic polynomials. Topics include the expected number of real zeros of random orthogonal polynomials and the number and expected number of real zeros of trigonometric polynomials. The book takes a look at convergence and limit theorems for random polynomials and distribution of the zeros of random algebraic polynomials, including limit theorems for random algebraic polynomials and random companion matrices and distribution of the zeros of random algebraic polynomials. The publication is a dependable reference for probabilists, statisticians, physicists, engineers, and economists.

FUNDAMENTALS OF ANALYTICAL CHEMISTRY

Cengage Learning Known for its readability and systematic, rigorous approach, this fully updated Ninth Edition of *FUNDAMENTALS OF ANALYTICAL CHEMISTRY* offers extensive coverage of the principles and practices of analytic chemistry and consistently shows students its applied nature. The book's award-winning authors begin each chapter with a story and photo of how analytic chemistry is applied in industry, medicine, and all the sciences. To further reinforce student learning, a wealth of dynamic photographs by renowned chemistry photographer Charlie Winters appear as chapter-openers and throughout the text. Incorporating Excel spreadsheets as a problem-solving tool, the Ninth Edition is enhanced by a chapter on *Using Spreadsheets in Analytical Chemistry*, updated spreadsheet summaries and problems, an Excel Shortcut Keystrokes for the PC insert card, and a supplement by the text authors, *EXCEL APPLICATIONS FOR ANALYTICAL CHEMISTRY*, which integrates this important aspect of the study of analytical chemistry into the book's already rich pedagogy. New to this edition is OWL, an online homework and assessment tool that includes the Cengage YouBook, a fully customizable and interactive eBook, which enhances conceptual understanding through hands-on integrated multimedia interactivity. Available with InfoTrac Student Collections <http://gocengage.com/infotrac>. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

MODELLISTICA NUMERICA PER PROBLEMI DIFFERENZIALI

Springer In questo testo si introducono i concetti di base per la modellistica numerica di problemi differenziali alle derivate parziali. Si considerano le classiche equazioni lineari ellittiche, paraboliche ed iperboliche, ma anche altre equazioni, quali quelle di diffusione e trasporto, di Navier-Stokes e le leggi di conservazione; si forniscono inoltre numerosi esempi fisici che stanno alla base di tali equazioni. Quindi si analizzano metodi di risoluzione numerica basati su elementi finiti (continui e discontinui), differenze finite, volumi finiti, metodi spettrali (continui e discontinui),

nonché strategie di approssimazione più avanzate basate sui metodi di decomposizione di domini o quelli di risoluzione di problemi di controllo ottimale. In particolare vengono discussi gli aspetti algoritmici e di implementazione al calcolatore e si forniscono diversi programmi di semplice utilizzo. Il testo non presuppone una approfondita conoscenza matematica delle equazioni alle derivate parziali: i concetti rigorosamente indispensabili al riguardo sono riportati nell'Appendice. Esso è pertanto adatto agli studenti dei corsi di laurea di indirizzo scientifico (Ingegneria, Matematica, Fisica, Scienze dell'Informazione) e consigliabile a ricercatori del mondo accademico ed extra-accademico che vogliano avvicinarsi a questo interessante ramo della matematica applicata e delle scienze computazionali.

MODELING THE HEART AND THE CIRCULATORY SYSTEM

Springer The book comprises contributions by some of the most respected scientists in the field of mathematical modeling and numerical simulation of the human cardiocirculatory system. The contributions cover a wide range of topics, from the preprocessing of clinical data to the development of mathematical equations, their numerical solution, and both in-vivo and in-vitro validation. They discuss the flow in the systemic arterial tree and the complex electro-fluid-mechanical coupling in the human heart. Many examples of patient-specific simulations are presented. This book is addressed to all scientists interested in the mathematical modeling and numerical simulation of the human cardiocirculatory system.

INFORMATION AND COMMUNICATION TECHNOLOGIES OF ECUADOR (TIC.EC)

Springer Nature This book constitutes the proceedings of the Sixth Conference on Information and Communication Technologies "TIC.EC", held in Cuenca, Ecuador, from November 27 to 29, 2019. Considered one of the most important conferences on ICT in Ecuador, it brings together scholars and practitioners from the country and abroad to discuss the development, issues and projections of the use of information and communication technologies in multiples fields of application. The 2019 "TIC.EC" conference was organized by Universidad del Azuay (UDA) and its Engineering School, as well as the Ecuadorian Corporation for the Development of Research and Academia (CEDIA). The book covers the following topics: · Software engineering · Security · Data · Networks · Architecture · Applied ICTs · Technological entrepreneurship · Links between research and industry · High-impact innovation · Knowledge management and intellectual property

PYTHON PARA TODOS

EXPLORANDO LA INFORMACIÓN CON PYTHON 3

Independently Published Python para Todos está diseñado para introducir a los estudiantes en la programación y el desarrollo de software a través de un enfoque en la exploración de datos. Puedes pensar en Python como una herramienta para resolver problemas que están más allá de las capacidades de una simple hoja de cálculo. Python es un lenguaje de programación fácil de usar y sencillo de aprender,

disponible de forma gratuita para equipos Macintosh, Windows, o Linux. Una vez que aprendes Python, puedes utilizarlo el resto de tu carrera sin necesidad de comprar ningún software. Existen copias electrónicas gratuitas de este libro en varios formatos, así como material de soporte para el libro, que puedes encontrar en es.py4e.com. Los materiales del curso están disponibles bajo una Licencia Creative Commons, de modo que puedes adaptarlos para enseñar tu propio curso de Python.

THE DEFINITIVE GUIDE TO DAX

BUSINESS INTELLIGENCE WITH MICROSOFT EXCEL, SQL SERVER ANALYSIS SERVICES, AND POWER BI

Microsoft Press This comprehensive and authoritative guide will teach you the DAX language for business intelligence, data modeling, and analytics. Leading Microsoft BI consultants Marco Russo and Alberto Ferrari help you master everything from table functions through advanced code and model optimization. You'll learn exactly what happens under the hood when you run a DAX expression, how DAX behaves differently from other languages, and how to use this knowledge to write fast, robust code. If you want to leverage all of DAX's remarkable power and flexibility, this no-compromise "deep dive" is exactly what you need. Perform powerful data analysis with DAX for Microsoft SQL Server Analysis Services, Excel, and Power BI Master core DAX concepts, including calculated columns, measures, and error handling Understand evaluation contexts and the CALCULATE and CALCULATETABLE functions Perform time-based calculations: YTD, MTD, previous year, working days, and more Work with expanded tables, complex functions, and elaborate DAX expressions Perform calculations over hierarchies, including parent/child hierarchies Use DAX to express diverse and unusual relationships Measure DAX query performance with SQL Server Profiler and DAX Studio

MATHEMATICA

MATHEMATICAL ANALYSIS I

Springer The purpose of the volume is to provide a support for a first course in Mathematics. The contents are organised to appeal especially to Engineering, Physics and Computer Science students, all areas in which mathematical tools play a crucial role. Basic notions and methods of differential and integral calculus for functions of one real variable are presented in a manner that elicits critical reading and prompts a hands-on approach to concrete applications. The layout has a specifically-designed modular nature, allowing the instructor to make flexible didactical choices when planning an introductory lecture course. The book may in fact be employed at three levels of depth. At the elementary level the student is supposed to grasp the very essential ideas and familiarise with the corresponding key techniques. Proofs to the main results befit the intermediate level, together with several remarks and complementary notes enhancing the treatise. The last, and farthest-reaching, level requires the additional study of the material contained in the appendices, which enable the strongly motivated reader to explore further into the subject. Definitions and properties are furnished with substantial examples to

stimulate the learning process. Over 350 solved exercises complete the text, at least half of which guide the reader to the solution. This new edition features additional material with the aim of matching the widest range of educational choices for a first course of Mathematics.

ELOQUENT JAVASCRIPT, 3RD EDITION

A MODERN INTRODUCTION TO PROGRAMMING

No Starch Press Completely revised and updated, this best-selling introduction to programming in JavaScript focuses on writing real applications. JavaScript lies at the heart of almost every modern web application, from social apps like Twitter to browser-based game frameworks like Phaser and Babylon. Though simple for beginners to pick up and play with, JavaScript is a flexible, complex language that you can use to build full-scale applications. This much anticipated and thoroughly revised third edition of Eloquent JavaScript dives deep into the JavaScript language to show you how to write beautiful, effective code. It has been updated to reflect the current state of JavaScript and web browsers and includes brand-new material on features like class notation, arrow functions, iterators, async functions, template strings, and block scope. A host of new exercises have also been added to test your skills and keep you on track. As with previous editions, Haverbeke continues to teach through extensive examples and immerses you in code from the start, while exercises and full-chapter projects give you hands-on experience with writing your own programs. You start by learning the basic structure of the JavaScript language as well as control structures, functions, and data structures to help you write basic programs. Then you'll learn about error handling and bug fixing, modularity, and asynchronous programming before moving on to web browsers and how JavaScript is used to program them. As you build projects such as an artificial life simulation, a simple programming language, and a paint program, you'll learn how to: - Understand the essential elements of programming, including syntax, control, and data - Organize and clarify your code with object-oriented and functional programming techniques - Script the browser and make basic web applications - Use the DOM effectively to interact with browsers - Harness Node.js to build servers and utilities Isn't it time you became fluent in the language of the Web? * All source code is available online in an inter-active sandbox, where you can edit the code, run it, and see its output instantly.

MATLAB PROGRAMMING FOR ENGINEERS

Cengage Learning Emphasizing problem-solving skills throughout, this fifth edition of Chapman's highly successful book teaches MATLAB as a technical programming language, showing students how to write clean, efficient, and well-documented programs, while introducing them to many of the practical functions of MATLAB. The first eight chapters are designed to serve as the text for an Introduction to Programming / Problem Solving course for first-year engineering students. The remaining chapters, which cover advanced topics such as I/O, object-oriented programming, and Graphical User Interfaces, may be covered in a longer course or

used as a reference by engineering students or practicing engineers who use MATLAB. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

JULIA HIGH PERFORMANCE

Packt Publishing Ltd Design and develop high performing programs with Julia About This Book Learn to code high reliability and high performance programs Stand out from the crowd by developing code that runs faster than your peers' codes This book is intended for developers who are interested in high performance technical programming. Who This Book Is For This book is for beginner and intermediate Julia programmers who are interested in high performance technical computing. You will have a basic familiarity with Julia syntax, and have written some small programs in the language. What You Will Learn Discover the secrets behind Julia's speed Get a sense of the possibilities and limitations of Julia's performance Analyze the performance of Julia programs Measure the time and memory taken by Julia programs Create fast machine code using Julia's type information Define and call functions without compromising Julia's performance Understand number types in Julia Use Julia arrays to write high performance code Get an overview of Julia's distributed computing capabilities In Detail Julia is a high performance, high-level dynamic language designed to address the requirements of high-level numerical and scientific computing. Julia brings solutions to the complexities faced by developers while developing elegant and high performing code. Julia High Performance will take you on a journey to understand the performance characteristics of your Julia programs, and enables you to utilize the promise of near C levels of performance in Julia. You will learn to analyze and measure the performance of Julia code, understand how to avoid bottlenecks, and design your program for the highest possible performance. In this book, you will also see how Julia uses type information to achieve its performance goals, and how to use multiple dispatch to help the compiler to emit high performance machine code. Numbers and their arrays are obviously the key structures in scientific computing - you will see how Julia's design makes them fast. The last chapter will give you a taste of Julia's distributed computing capabilities. Style and approach This is a hands-on manual that will give you good explanations about the important concepts related to Julia programming.

AUTOMATIC MALWARE ANALYSIS

AN EMULATOR BASED APPROACH

Springer Science & Business Media Malicious software (i.e., malware) has become a severe threat to interconnected computer systems for decades and has caused billions of dollars damages each year. A large volume of new malware samples are discovered daily. Even worse, malware is rapidly evolving becoming more sophisticated and evasive to strike against current malware analysis and defense systems. Automatic Malware Analysis presents a virtualized malware analysis framework that addresses common challenges in malware analysis. In regards to this new analysis framework, a series of analysis techniques for automatic malware

analysis is developed. These techniques capture intrinsic characteristics of malware, and are well suited for dealing with new malware samples and attack mechanisms.

PROBABILITY ESSENTIALS

Springer Science & Business Media This introduction can be used, at the beginning graduate level, for a one-semester course on probability theory or for self-direction without benefit of a formal course; the measure theory needed is developed in the text. It will also be useful for students and teachers in related areas such as finance theory, electrical engineering, and operations research. The text covers the essentials in a directed and lean way with 28 short chapters, and assumes only an undergraduate background in mathematics. Readers are taken right up to a knowledge of the basics of Martingale Theory, and the interested student will be ready to continue with the study of more advanced topics, such as Brownian Motion and Ito Calculus, or Statistical Inference.

CALCOLO SCIENTIFICO

ESERCIZI E PROBLEMI RISOLTI CON MATLAB E OCTAVE

Springer Questo testo è concepito per i corsi delle Facoltà di Ingegneria e di Scienze. Esso affronta tutti gli argomenti tipici della Matematica Numerica, spaziando dal problema di risolvere sistemi di equazioni lineari e non lineari a quello di approssimare una funzione, di calcolare i suoi minimi, le sue derivate ed il suo integrale definito fino alla risoluzione di equazioni differenziali ordinarie e alle derivate parziali con metodi alle differenze finite ed agli elementi finiti. Un capitolo iniziale conduce lo studente ad un rapido ripasso degli argomenti dell'Analisi Matematica e dell'Algebra Lineare di uso frequente nel volume e ad una introduzione ai linguaggi MATLAB e Octave. Al fine di rendere maggiormente incisiva la presentazione e fornire un riscontro quantitativo immediato alla teoria vengono implementati in linguaggio MATLAB e Octave tutti gli algoritmi che via via si introducono. Vengono inoltre proposti numerosi esercizi, tutti risolti per esteso, ed esempi, anche con riferimento ad applicazioni in vari ambiti scientifici. Questa sesta edizione si differenzia dalle precedenti per l'aggiunta di nuovi sviluppi, di nuovi esempi relativi ad applicazioni di interesse reale e di svariati esercizi con relative soluzioni.

REAL ALGEBRAIC GEOMETRY

Springer Science & Business Media This book is concerned with one of the most fundamental questions of mathematics: the relationship between algebraic formulas and geometric images. At one of the first international mathematical congresses (in Paris in 1900), Hilbert stated a special case of this question in the form of his 16th problem (from his list of 23 problems left over from the nineteenth century as a legacy for the twentieth century). In spite of the simplicity and importance of this problem (including its numerous applications), it remains unsolved to this day (although, as you will now see, many remarkable results have been discovered).

NEW REFLECTIONS ON THE REVOLUTION OF OUR TIME

Verso Trade No Marketing Blurb

**MATHEMATICAL METHODS FOR PHYSICISTS INTERNATIONAL
STUDENT EDITION**

Elsevier This best-selling title provides in one handy volume the essential mathematical tools and techniques used to solve problems in physics. It is a vital addition to the bookshelf of any serious student of physics or research professional in the field. The authors have put considerable effort into revamping this new edition. Updates the leading graduate-level text in mathematical physics Provides comprehensive coverage of the mathematics necessary for advanced study in physics and engineering Focuses on problem-solving skills and offers a vast array of exercises Clearly illustrates and proves mathematical relations New in the Sixth Edition: Updated content throughout, based on users' feedback More advanced sections, including differential forms and the elegant forms of Maxwell's equations A new chapter on probability and statistics More elementary sections have been deleted

PYTHON TUTORIAL

RELEASE 3. 6. 6RC1

Createspace Independent Publishing Platform Python is an easy to learn, powerful programming language. It has efficient high-level data structures and a simple but effective approach to object-oriented programming. Python's elegant syntax and dynamic typing, together with its interpreted nature, make it an ideal language for scripting and rapid application development in many areas on most platforms. The Python interpreter and the extensive standard library are freely available in source or binary form for all major platforms from the Python Web site, <https://www.python.org/>, and may be freely distributed. The same site also contains distributions of and pointers to many free third party Python modules, programs and tools, and additional documentation. The Python interpreter is easily extended with new functions and data types implemented in C or C++ (or other languages callable from C). Python is also suitable as an extension language for customizable applications. This tutorial introduces the reader informally to the basic concepts and features of the python language and system. It helps to have a Python interpreter handy for hands-on experience, but all examples are self contained, so the tutorial can be read off-line as well. For a description of standard objects and modules, see [library-index](#). [reference-index](#) gives a more formal definition of the language. To write extensions in C or C++, read [extending-index](#) and [c-api-index](#). There are also several books covering Python in depth. This tutorial does not attempt to be comprehensive and cover every single feature, or even every commonly used feature. Instead, it introduces many of Python's most noteworthy features, and will give you a good idea of the language's flavor and style. After reading it, you will be able to read and write Python modules and programs, and you will be ready to learn more about the various Python library modules described in [library-index](#). The

Glossary is also worth going through.

FRANCISCO SUÁREZ (1548-1617):

JESUITS AND THE COMPLEXITIES OF MODERNITY

BRILL This is a bilingual edition of the selected peer-reviewed papers that were submitted for the International Symposium on Jesuit Studies on the thought of the Jesuit Francisco Suárez (1548-1617). The symposium was co-organized in Seville in 2018 by the Departamento de Humanidades y Filosofía at Universidad Loyola Andalucía and the Institute for Advanced Jesuit Studies at Boston College.

LATEX IN 157 MINUTES

THE (NOT SO) SHORT INTRODUCTION TO LATEX

Samurai Media Limited Latex is a typesetting system that is very suitable for producing scientific and mathematical documents of high typographical quality. It is also suitable for producing all sorts of other documents, from simple letters to complete books. Latex uses Tex as its formatting engine. This short introduction describes Latex and should be sufficient for most applications of Latex.

ELEMENTI DI FLUIDODINAMICA

UN'INTRODUZIONE PER L'INGEGNERIA

Springer Science & Business Media Il testo propone un primo approccio alla Fluidodinamica, ad un livello formale adeguato. Privilegia le trattazioni matematica e numerica dei problemi, stimolando nel Lettore l'acquisizione di un'autonomia culturale sufficiente per eventuali approfondimenti.

THINK JULIA

HOW TO THINK LIKE A COMPUTER SCIENTIST

O'Reilly Media If you're just learning how to program, Julia is an excellent JIT-compiled, dynamically-typed language with a clean syntax. This hands-on guide uses Julia (version 1.0) to walk you through programming one step at a time, beginning with basic programming concepts before moving on to more advanced capabilities, such as creating new types and multiple dispatch. Designed from the beginning for high performance, Julia is a general-purpose language not only ideal for numerical analysis and computational science, but also for web programming or scripting. Through exercises in each chapter, you'll try out programming concepts as you learn them. Think Julia is ideal for students at the high school or college level, as well as self-learners, home-schooled students, and professionals who need to learn programming basics. Start with the basics, including language syntax and semantics Get a clear definition of each programming concept Learn about values, variables, statements, functions, and data structures in a logical progression Discover how to work with files and databases Understand types, methods, and multiple dispatch Use debugging techniques to fix syntax, runtime, and semantic errors Explore interface

design and data structures through case studies

FINANCIAL MATHEMATICS

THEORY AND PROBLEMS FOR MULTI-PERIOD MODELS

Springer Science & Business Media With the Bologna Accords a bachelor-master-doctor curriculum has been introduced in various countries with the intention that students may enter the job market already at the bachelor level. Since financial Institutions provide non negligible job opportunities also for mathematicians, and scientists in general, it appeared to be appropriate to have a financial mathematics course already at the bachelor level in mathematics. Most mathematical techniques in use in financial mathematics are related to continuous time models and require thus notions from stochastic analysis that bachelor students do in general not possess. Basic notions and methodologies in use in financial mathematics can however be transmitted to students also without the technicalities from stochastic analysis by using discrete time (multi-period) models for which general notions from Probability suffice and these are generally familiar to students not only from science courses, but also from economics with quantitative curricula. There do not exists many textbooks for multi-period models and the present volume is intended to fill in this gap. It deals with the basic topics in financial mathematics and, for each topic, there is a theoretical section and a problem section. The latter includes a great variety of possible problems with complete solution.

I HAVE LIFE

Penguin UK And so began Alison's nightmare journey with the two callous killers who were to rape her, stab her so many times doctors could not count the wounds, slit her throat and leave her for dead in a filthy clearing miles from the city of Port Elizabeth which was her home. But Alison defied death. And more than that, she denied her attackers the satisfaction of destroying her life. I Have Life is the triumphant story of a woman who refused to become a victim. The courage which allowed her to move beyond severe physical and emotional trauma and to turn a devastating experience into something life-affirming and strong, is an inspiration to people everywhere.

PRO JAVASCRIPT TECHNIQUES

Apres This book addresses today's approach to JavaScript in detail: modern browser support, including information on Internet Explorer 7; Object-Oriented JavaScript; testing and debugging; unobtrusive JavaScript techniques using DOM Scripting; Ajax; creating and using blocks of reusable code, and the future of JavaScript. All the concepts expressed in this up-to-the-minute reference are thoroughly backed up with real world examples and full-scale case studies. The book offers reusable functions for readers to use in their own projects, a significant time-saver. Also included are several reference sections that allow developers to look up details quickly and easily.

SPSS STATISTICS 17.0

ADVANCED STATISTICAL PROCEDURES COMPANION

Key Message: SPSS® 17.0: Advanced Statistical Procedures Companion contains valuable tips, warnings, and examples that will help you take advantage of SPSS and better analyze data. This book offers clear and concise explanations and examples of advanced statistical procedures in the SPSS Advanced and Regression modules. Key Topics: Model Selection Loglinear Analysis; Logit Loglinear Analysis; Multinomial Logistic Regression; Ordinal Regression; Probit Regression; Kaplan-Meier Survival Analysis; Life Tables; Cox Regression; Variance Components; Linear Mixed Models; Generalized Linear Models; Generalized Estimating Equations; Nonlinear Regression; Two-Stage Least-Squares Regression; Weighted Least-Squares Regression; Multidimensional Scaling Market: for all readers interested in SPSS.

LOGIC FOR DUMMIES

John Wiley & Sons Logic concepts are more mainstream than you may realize. There's logic every place you look and in almost everything you do, from deciding which shirt to buy to asking your boss for a raise, and even to watching television, where themes of such shows as CSI and Numbers incorporate a variety of logistical studies. Logic For Dummies explains a vast array of logical concepts and processes in easy-to-understand language that make everything clear to you, whether you're a college student or a student of life. You'll find out about: Formal Logic Syllogisms Constructing proofs and refutations Propositional and predicate logic Modal and fuzzy logic Symbolic logic Deductive and inductive reasoning Logic For Dummies tracks an introductory logic course at the college level. Concrete, real-world examples help you understand each concept you encounter, while fully worked out proofs and fun logic problems encourage you students to apply what you've learned.