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Getting Started with Kubernetes

Schedule and run application containers using Kubernetes Key FeaturesGet to grips with a wide range of tools to monitor and secure your deploymentsManage your container clusters and networks using KubernetesGet well-versed with the fundamentals of KubernetesBook Description Kubernetes has continued to grow and achieve broad adoption across various industries, helping you to orchestrate and automate container deployments on a massive scale. Based on the recent release of Kubernetes 1.12, Getting Started with Kubernetes gives you a complete understanding of how to install a Kubernetes cluster. The book focuses on core Kubernetes constructs, such as pods, services, replica sets, replication controllers, and labels. You will understand cluster-level networking in Kubernetes, and learn to set up external access to applications running in the cluster. As you make your way through the book, you'll understand how to manage deployments and perform updates with minimal downtime. In addition to this, you will explore operational aspects of Kubernetes , such as monitoring and logging, later moving on to advanced concepts such as container security and cluster federation. You'll get to grips with integrating your build pipeline and deployments within a Kubernetes cluster, and be able to understand and interact with open source projects. In the concluding chapters, you'll orchestrate updates behind the scenes, avoid downtime on your cluster, and deal with underlying cloud provider instability within your cluster. By the end of this book, you'll have a complete understanding of the Kubernetes platform and will start deploying applications on it. What you will learnDownload, install, and configure the Kubernetes code baseSet up and access monitoring and logging for Kubernetes clustersSet up external access to applications running in the clusterLearn how to manage and scale kubernetes with hosted platforms on AWS, Azure, and GCPRun multiple clusters and manage them from a single control planeDiscover top tools for deploying and managing a Kubernetes clusterLearn how to get production ready and harden Kubernetes operations, networking, and storageWho this book is for Getting Started with Kubernetes is for developers, system administrators, and DevOps engineers who want to automate the deployment process and scale their applications. No prior knowledge of Kubernetes is required.

The The Complete Kubernetes Guide

Design, deploy, and manage large-scale containers using Kubernetes Key FeaturesGain insight into the latest features of Kubernetes, including Prometheus and API aggregationDiscover ways to keep your clusters always available, scalable, and up-to-dateMaster the skills of designing and deploying large clusters on various cloud platformsBook Description If you are running a number of containers and want to be able to automate the way they’re managed, it can be helpful to have Kubernetes at your disposal. This Learning Path guides you through core Kubernetes constructs, such as pods, services, replica sets, replication controllers, and labels. You'll get started by learning how to integrate your build pipeline and deployments in a Kubernetes cluster. As you cover more chapters in the Learning Path, you'll get up to speed with orchestrating updates behind the scenes, avoiding downtime on your cluster, and dealing with underlying cloud provider instability in your cluster. With the help of real-world use cases, you'll also explore options for network configuration, and understand how to set up, operate, and troubleshoot various Kubernetes networking plugins. In addition to this, you'll gain insights into custom resource development and utilization in automation and maintenance workflows. By the end of this Learning Path, you'll have the expertise you need to progress from an intermediate to an advanced level of understanding Kubernetes. This Learning Path includes content from the following Packt products: Getting Started with Kubernetes - Third Edition by Jonathan Baier and Jesse WhiteMastering Kubernetes - Second Edition by Gigi SayfanWhat you will learnDownload, install, and configure the Kubernetes code baseCreate and configure custom Kubernetes resources Use third-party resources in your automation workflowsDeliver applications as standard packagesSet up and access monitoring and logging for Kubernetes clustersSet up external access to

applications running in the clusterManage and scale Kubernetes with hosted platforms on Amazon Web Services (AWS), Azure, and Google Cloud Platform (GCP)Run multiple clusters and manage them from a single control planeWho this book is for If you are a developer or a system administrator with an intermediate understanding of Kubernetes and want to master its advanced features, then this book is for you. Basic knowledge of networking is required to easily understand the concepts explained.

Learn Linux Quickly

Learn over 116 Linux commands to develop the skills you need to become a professional Linux system administrator Key FeaturesExplore essential Linux commands and understand how to use Linux help toolsDiscover the power of task automation with bash scripting and Cron jobsGet to grips with various network configuration tools and disk management techniquesBook Description Linux is one of the most sought-after skills in the IT industry, with jobs involving Linux being increasingly in demand. Linux is by far the most popular operating system deployed in both public and private clouds; it is the processing power behind the majority of IoT and embedded devices. Do you use a mobile device that runs on Android? Even Android is a Linux distribution. This Linux book is a practical guide that lets you explore the power of the Linux command-line interface. Starting with the history of Linux, you'll quickly progress to the Linux filesystem hierarchy and learn a variety of basic Linux commands. You'll then understand how to make use of the extensive Linux documentation and help tools. The book shows you how to manage users and groups and takes you through the process of installing and managing software on Linux systems. As you advance, you'll discover how you can interact with Linux processes and troubleshoot network problems before learning the art of writing bash scripts and automating administrative tasks with Cron jobs. In addition to this, you'll get to create your own Linux commands and analyze various disk management techniques. By the end of this book, you'll have gained the Linux skills required to become an efficient Linux system administrator and be able to manage and work productively on Linux systems. What you will learnMaster essential Linux commands and analyze the Linux filesystem hierarchyFind out how to manage users and groups in LinuxAnalyze Linux file ownership and permissionsAutomate monotonous administrative tasks with Cron jobs and bash scriptsUse aliases to create your own Linux commandsUnderstand how to interact with and manage Linux processesBecome well-versed with using a variety of Linux networking commandsPerform disk partitioning, mount filesystems, and create logical volumesWho this book is for This book doesn't assume any prior Linux knowledge, which makes it perfect for beginners. Intermediate and advanced Linux users will also find this book very useful as it covers a wide range of topics necessary for Linux administration.

Manual for the self-taught computer scientist

After the success in french of the \"manuel de l'autodidacte en informatique\

Linux 5 Day Introduction Course

\" Why an introductory Linux admin, command line-oriented eBook in 2023 when GUIs are so powerful now and Windows is still the dominant desktop OS? Well, lots of reasons, but for anyone looking for a career in IT, having some Linux skills is an obvious bonus and as it's a free OS that has programmes written for it that cover almost any use anyone would want. It's a cheap way in to the IT industry for students on a budget if nothing else, as it runs on almost all hardware, but you can research what laptops or hardware like Wi-Fi cards it doesn't have in built drivers for on the web. Linux has never been so popular, as it's a very stable, truly multitasking OS, and I hope to show you some of its incredibly low overhead versatility, running as it is on my 15 year old, dual core laptop, writing this text – from basic Desktop user admin, to software installation, file system security concepts, basic programming environments for Python, C and Java, and very importantly, backups. All in 5 \"days\

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Linux Administration Cookbook

Over 100 recipes to get up and running with the modern Linux administration ecosystem Key FeaturesUnderstand and implement the core system administration tasks in LinuxDiscover tools and techniques to troubleshoot your Linux systemMaintain a healthy system with good security and backup practicesBook Description Linux is one of the most widely used operating systems among system administrators,and even modern application and server development is heavily reliant on the Linux platform. The Linux Administration Cookbook is your go-to guide to get started on your Linux journey. It will help you understand what that strange little server is doing in the corner of your office, what the mysterious virtual machine languishing in Azure is crunching through, what that circuit-board-like thing is doing under your office TV, and why the LEDs on it are blinking rapidly. This book will get you started with administering Linux, giving you the knowledge and tools you need to troubleshoot day-to-day problems, ranging from a Raspberry Pi to a server in Azure, while giving you a good understanding of the fundamentals of how GNU/Linux works. Through the course of the book, you'll install and configure a system, while the author regales you with errors and anecdotes from his vast experience as a data center hardware engineer, systems administrator, and DevOps consultant. By the end of the book, you will have gained practical knowledge of Linux, which will serve as a bedrock for learning Linux administration and aid you in your Linux journey. What you will learnInstall and manage a Linux server, both locally and in the cloudUnderstand how to perform administration across all Linux distrosWork through evolving concepts such as IaaS versus PaaS, containers, and automationExplore security and configuration best practicesTroubleshoot your system if something goes wrongDiscover and mitigate hardware issues, such as faulty memory and failing drivesWho this book is for If you are a system engineer or system administrator with basic experience of working with Linux, this book is for you.

Accelerating Development Velocity Using Docker

Discover how a software engineer can leverage Docker in order to expedite development velocity. This book focuses on the fundamental concepts this program is built upon and explores how it can help you get your services up and running inside Docker containers. You'll also review tips on how to debug microservices applications that run inside Docker containers. Tech companies are now developing complex softwares that are comprised of multiple services running on different platforms, and Docker has become an essential part of coordinating the communication between these services and platforms. This book addresses problems caused by drifting microservices, debugging across services, inconsistent environments across machines, and coordinating development of machine learning systems between a team of developers, etc. Accelerating Development Velocity Using Docker puts you on the path to transforming your complex systems into more efficient ones. What You'll Learn Setup Docker and employ quick solutions to road blocks Review challenges associated with debugging microservices that sit behind a complex application Leverage Docker features to seamlessly get multiple microservices up and running Debug inside a Docker container Review advanced use cases of Docker that can help consistency of development environments· Who This Book Is

For Ideal for new to mid-level infrastructure engineers who want to learn how to make their development environments efficient across their and cross teams, or for students who aspire to learn basics of how to debug distributed systems and how to develop efficient applications.

Certified Kubernetes Administrator (CKA) Exam Guide

Conquer the CNCF Certified Kubernetes Administrator (CKA) exam KEY FEATURES ? This Kubernetes technical guide covers the entire CNCF syllabus for the CKA exam. ? Contains extensive hands-on manifest code, command line examples and task walkthroughs. ? Includes two practice CKA exams with fully-worked solutions. DESCRIPTION Kubernetes is the de facto industry-standard for production-grade container orchestration. The CNCF Certified Kubernetes Administrator (CKA) Certification is an in-demand, industry-recognised benchmark denoting the holder as possessing the expertise required to create, secure, manage and troubleshoot Kubernetes clusters. The CNCF CKA exam is a fully hands-on, command line based assessment. This guide structure follows the CKA curriculum. Start with need-to-know Kubernetes concepts and implementation details using hands-on code examples and command line walkthroughs. You will explore core concepts including cluster architecture, installation and configuration. As the book progresses, you will master security principles with RBAC, confidently deploy and manage applications, and explore the intricacies of Kubernetes storage and networking. The following chapters on Troubleshooting and Exam Preparation provide important exam and assessment environment hints and tips, command line techniques and crucial exam strategies. The final two chapters present full-length CKA practice exams with fully-worked exam-grade solutions. This pragmatic blend of theory, worked examples, and analysis techniques ensures the reader is primed to be successful in the real Certified Kubernetes Administrator (CKA) exam. WHAT YOU WILL LEARN ? The skills and knowledge required to professionally administer Kubernetes clusters. ? Understanding of Kubernetes command line examples and task walkthroughs. ? Insight from detailed fully-worked solutions for two CKA practice exams. ? Working details for the CNCF CKA exam environment. ? How to manage Kubernetes clusters with precision and control. WHO THIS BOOK IS FOR This book is for cloud application developers, devops engineers, cloud architects and datacentre administrators who want to conquer the CNCF CKA exam, certifying their Kubernetes skills in the marketplace. TABLE OF CONTENTS 1. Introduction 2. Cluster Architecture, Installation and Configuration 3. Workloads and Scheduling 4. Services and Networking 5. Storage 6. Troubleshooting 7. CKA Exam Preparation 8. CKA Mock Exam 1 with Solutions 9. CKA Mock Exam 2 with Solutions

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Exploring BeagleBone

In-depth instruction and practical techniques for building with the BeagleBone embedded Linux platform Exploring BeagleBone is a hands-on guide to bringing gadgets, gizmos, and robots to life using the popular BeagleBone embedded Linux platform. Comprehensive content and deep detail provide more than just a

BeagleBone instruction manual-you'll also learn the underlying engineering techniques that will allow you to create your own projects. The book begins with a foundational primer on essential skills, and then gradually moves into communication, control, and advanced applications using C/C++, allowing you to learn at your own pace. In addition, the book's companion website features instructional videos, source code, discussion forums, and more, to ensure that you have everything you need. The BeagleBone's small size, high performance, low cost, and extreme adaptability have made it a favorite development platform, and the Linux software base allows for complex yet flexible functionality. The BeagleBone has applications in smart buildings, robot control, environmental sensing, to name a few; and, expansion boards and peripherals dramatically increase the possibilities. Exploring BeagleBone provides a reader-friendly guide to the device, including a crash course in computer engineering. While following step by step, you can: Get up to speed on embedded Linux, electronics, and programming Master interfacing electronic circuits, buses and modules, with practical examples Explore the Internet-connected BeagleBone and the BeagleBone with a display Apply the BeagleBone to sensing applications, including video and sound Explore the BeagleBone's Programmable Real-Time Controllers Updated to cover the latest Beagle boards, Linux kernel versions, and Linux software releases. Includes new content on Linux kernel development, the Linux Remote Processor Framework, CAN bus, IoT frameworks, and much more! Hands-on learning helps ensure that your new skills stay with you, allowing you to design with electronics, modules, or peripherals even beyond the BeagleBone. Insightful guidance and online peer support help you transition from beginner to expert as you master the techniques presented in Exploring BeagleBone, the practical handbook for the popular computing platform.

Stable and Unstable Homotopy

This volume presents the proceedings of workshops on stable homotopy theory and on unstable homotopy theory held at The Field Institute as part of the homotopy program for the year 1996. The papers in the volume describe current research in the subject, and all included works were refereed. Rather than being a summary of work to be published elsewhere, each paper is the unique source for the new material it contains. The book contains current research from international experts in the subject area, and presents open problems with directions for future research.

Manuel de l'autodidacte en informatique

Vous souhaitez devenir développeur mais sans passer le moindre diplôme ? Apprenez l'informatique pas à pas à votre rythme en autodidacte avec cet ouvrage de vulgarisation rédigé par un autodidacte lui-même ! Retracez l’histoire et l’évolution de l’informatique, apprenez pas à pas les bases du développement et du hardware avec des indications claires, précises et illustrées ainsi que des exercices. Le tout dans un langage vulgarisé à la portée de tous vous permettant de réaliser vous-mêmes vos propres programmes. Devenez développeur à votre rythme en suivant cet ouvrage de référence !

The Debian Administrator's Handbook

Whether you're a veteran or an absolute n00b, this is the best place to start with Kali Linux, the security professional's platform of choice, and a truly industrial-grade, and world-class operating system distribution-mature, secure, and enterprise-ready.

Kali Linux Revealed

Explore GPU-enabled programmable environment for machine learning, scientific applications, and gaming using PuCUDA, PyOpenGL, and Anaconda Accelerate Key FeaturesUnderstand effective synchronization strategies for faster processing using GPUsWrite parallel processing scripts with PyCuda and PyOpenCLLearn to use the CUDA libraries like CuDNN for deep learning on GPUsBook Description GPUs are proving to be excellent general purpose-parallel computing solutions for high performance tasks such as deep learning and scientific computing. This book will be your guide to getting started with GPU computing.

It will start with introducing GPU computing and explain the architecture and programming models for GPUs. You will learn, by example, how to perform GPU programming with Python, and you'll look at using integrations such as PyCUDA, PyOpenCL, CuPy and Numba with Anaconda for various tasks such as machine learning and data mining. Going further, you will get to grips with GPU work flows, management, and deployment using modern containerization solutions. Toward the end of the book, you will get familiar with the principles of distributed computing for training machine learning models and enhancing efficiency and performance. By the end of this book, you will be able to set up a GPU ecosystem for running complex applications and data models that demand great processing capabilities, and be able to efficiently manage memory to compute your application effectively and quickly. What you will learnUtilize Python libraries and frameworks for GPU accelerationSet up a GPU-enabled programmable machine learning environment on your system with AnacondaDeploy your machine learning system on cloud containers with illustrated examplesExplore PyCUDA and PyOpenCL and compare them with platforms such as CUDA, OpenCL and ROCm.Perform data mining tasks with machine learning models on GPUsExtend your knowledge of GPU computing in scientific applicationsWho this book is for Data Scientist, Machine Learning enthusiasts and professionals who wants to get started with GPU computation and perform the complex tasks with low-latency. Intermediate knowledge of Python programming is assumed.

Hands-On GPU Computing with Python

This established textbook offers a one-stop, comprehensive coverage of air pollution, all in an easy-reading and accessible style. The fourth edition, broadly updated and developed throughout, includes a brand-new chapter providing a broader overview to the topic for general reading, and presents fresh materials on air pollution modelling, mitigation and control, tailored to the needs of both amateur and specialist users. Retaining a quantitative perspective, the covered topics include: gaseous and particulate air pollutants, measurement techniques, meteorology and modelling, area sources, mobile sources, indoor air, effects on plants, materials, humans and animals, impact on climate change and ozone profiles and air quality legislations. This edition also includes a final chapter covering a suite of sampling and laboratory practical experiments that can be used for either classroom teachings, or as part of research projects. As with previous editions, the book is aimed to serve as a useful reading resource for upper-level undergraduate and postgraduate courses specialising in air pollution, with dedicated case studies at the end of each chapter, as well as a list of revision questions provided at the end as a complementary section.

Air Pollution

PHP is experiencing a renaissance, though it may be difficult to tell with all of the outdated PHP tutorials online. With this practical guide, you'll learn how PHP has become a full-featured, mature language with object-orientation, namespaces, and a growing collection of reusable component libraries. You'll learn best practices for application architecture and planning, databases, security, testing, debugging, and deployment.

Modern PHP

A one stop, comprehensive textbook, covering the three essential components of air pollution science. The Third Edition has been updated with the latest developments, especially the inclusion of new information on the role of air pollutants in climate change. The authors give greater coverage to the developing economies around the world where air pollution problems are on the rise. The Third Edition continues to cover a wide range of air quality issues, retaining a quantitative perspective. Topics covered include - gaseous and particulate air pollutants, measurement techniques, meteorology and dispersion modelling, mobile sources, indoor air, effects on plants, materials, humans and animals. Moving away from classical toxic air pollutants, there is a chapter on climate change and another on the depletion of stratospheric ozone. A special feature of this new edition is the inclusion of a fresh chapter on air pollution mitigation by vegetation, mainly its role in maintaining a sustainable urban environment. Recommended for upper-level undergraduate and postgraduate courses specialising in air pollution, both for environmental scientists and engineers. The new material

included in the Third Edition extends its use by practitioners in consultancies or local authorities.

Air Pollution

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A comprehensive introduction to optimization with a focus on practical algorithms for the design of engineering systems. This book offers a comprehensive introduction to optimization with a focus on practical algorithms. The book approaches optimization from an engineering perspective, where the objective is to design a system that optimizes a set of metrics subject to constraints. Readers will learn about computational approaches for a range of challenges, including searching high-dimensional spaces, handling problems where there are multiple competing objectives, and accommodating uncertainty in the metrics. Figures, examples, and exercises convey the intuition behind the mathematical approaches. The text provides concrete implementations in the Julia programming language. Topics covered include derivatives and their generalization to multiple dimensions; local descent and first- and second-order methods that inform local descent; stochastic methods, which introduce randomness into the optimization process; linear constrained optimization, when both the objective function and the constraints are linear; surrogate models, probabilistic surrogate models, and using probabilistic surrogate models to guide optimization; optimization under uncertainty; uncertainty propagation; expression optimization; and multidisciplinary design optimization. Appendixes offer an introduction to the Julia language, test functions for evaluating algorithm performance, and mathematical concepts used in the derivation and analysis of the optimization methods discussed in the text. The book can be used by advanced undergraduates and graduate students in mathematics, statistics, computer science, any engineering field, (including electrical engineering and aerospace engineering), and operations research, and as a reference for professionals.

Detection of Chromosomal Alterations Induced by 1,3-butadiene Metabolites in Human Cells

The Sixth Edition of a classic in organic chemistry continues its tradition of excellence Now in its sixth edition, March's Advanced Organic Chemistry remains the gold standard in organic chemistry. Throughout its six editions, students and chemists from around the world have relied on it as an essential resource for planning and executing synthetic reactions. The Sixth Edition brings the text completely current with the most recent organic reactions. In addition, the references have been updated to enable readers to find the latest primary and review literature with ease. New features include: More than 25,000 references to the literature to facilitate further research Revised mechanisms, where required, that explain concepts in clear modern terms Revisions and updates to each chapter to bring them all fully up to date with the latest reactions and discoveries A revised Appendix B to facilitate correlating chapter sections with synthetic transformations

Algorithms for Optimization

Using a case study as its starting point, this guide examines the patterns of oppression built into organizations and institutions. Such systems of discrimination and oppression originate not with individuals within the institution, but rather the dynamics within the institutions themselves. Attention is given to the tactics employed to achieve equality and overcome oppressive attitudes in the workplace. According to this analysis,

the true test of an institution`s intentions is whether its policies achieve only token change or transform its deeper structure.

March's Advanced Organic Chemistry

Evolutionary algorithms are relatively new, but very powerful techniques used to find solutions to many real-world search and optimization problems. Many of these problems have multiple objectives, which leads to the need to obtain a set of optimal solutions, known as effective solutions. It has been found that using evolutionary algorithms is a highly effective way of finding multiple effective solutions in a single simulation run. Comprehensive coverage of this growing area of research Carefully introduces each algorithm with examples and in-depth discussion Includes many applications to real-world problems, including engineering design and scheduling Includes discussion of advanced topics and future research Can be used as a course text or for self-study Accessible to those with limited knowledge of classical multi-objective optimization and evolutionary algorithms The integrated presentation of theory, algorithms and examples will benefit those working and researching in the areas of optimization, optimal design and evolutionary computing. This text provides an excellent introduction to the use of evolutionary algorithms in multi-objective optimization, allowing use as a graduate course text or for self-study.

Beyond Token Change

Master the art of web exploitation with real-world techniques on SAML, WordPress, IoT, ElectronJS, and Ethereum smart contracts Purchase of the print or Kindle book includes a free PDF eBook Key Features Learn how to detect vulnerabilities using source code, dynamic analysis, and decompiling binaries Find and exploit vulnerabilities such as SQL Injection, XSS, Command Injection, RCE, and Reentrancy Analyze real-world security incidents based on MITRE ATT&CK to understand the risk at the CISO level Book DescriptionWeb attacks and exploits pose an ongoing threat to the interconnected world. This comprehensive book explores the latest challenges in web application security, providing you with an in-depth understanding of hackers' methods and the practical knowledge and skills needed to effectively understand web attacks. The book starts by emphasizing the importance of mindset and toolset in conducting successful web attacks. You'll then explore the methodologies and frameworks used in these attacks, and learn how to configure the environment using interception proxies, automate tasks with Bash and Python, and set up a research lab. As you advance through the book, you'll discover how to attack the SAML authentication layer; attack front-facing web applications by learning WordPress and SQL injection, and exploit vulnerabilities in IoT devices, such as command injection, by going through three CTFs and learning about the discovery of seven CVEs. Each chapter analyzes confirmed cases of exploitation mapped with MITRE ATT&CK. You'll also analyze attacks on Electron JavaScript-based applications, such as XSS and RCE, and the security challenges of auditing and exploiting Ethereum smart contracts written in Solidity. Finally, you'll find out how to disclose vulnerabilities. By the end of this book, you'll have enhanced your ability to find and exploit web vulnerabilities.What you will learn Understand the mindset, methodologies, and toolset needed to carry out web attacks Discover how SAML and SSO work and study their vulnerabilities Get to grips with WordPress and learn how to exploit SQL injection Find out how IoT devices work and exploit command injection Familiarize yourself with ElectronJS applications and transform an XSS to an RCE Discover how to audit Solidity's Ethereum smart contracts Get the hang of decompiling, debugging, and instrumenting web applications Who this book is for This book is for anyone whose job role involves ensuring their organization's security – penetration testers and red teamers who want to deepen their knowledge of the current security challenges for web applications, developers and DevOps professionals who want to get into the mindset of an attacker; and security managers and CISOs looking to truly understand the impact and risk of web, IoT, and smart contracts. Basic knowledge of web technologies, as well as related protocols is a must.

Multi-Objective Optimization using Evolutionary Algorithms

Genetic algorithms have been used in science and engineering as adaptive algorithms for solving practical problems and as computational models of natural evolutionary systems. This brief, accessible introduction describes some of the most interesting research in the field and also enables readers to implement and experiment with genetic algorithms on their own. It focuses in depth on a small set of important and interesting topics—particularly in machine learning, scientific modeling, and artificial life—and reviews a broad span of research, including the work of Mitchell and her colleagues. The descriptions of applications and modeling projects stretch beyond the strict boundaries of computer science to include dynamical systems theory, game theory, molecular biology, ecology, evolutionary biology, and population genetics, underscoring the exciting \"general purpose\" nature of genetic algorithms as search methods that can be employed across disciplines. An Introduction to Genetic Algorithms is accessible to students and researchers in any scientific discipline. It includes many thought and computer exercises that build on and reinforce the reader's understanding of the text. The first chapter introduces genetic algorithms and their terminology and describes two provocative applications in detail. The second and third chapters look at the use of genetic algorithms in machine learning (computer programs, data analysis and prediction, neural networks) and in scientific models (interactions among learning, evolution, and culture; sexual selection; ecosystems; evolutionary activity). Several approaches to the theory of genetic algorithms are discussed in depth in the fourth chapter. The fifth chapter takes up implementation, and the last chapter poses some currently unanswered questions and surveys prospects for the future of evolutionary computation.

Attacking and Exploiting Modern Web Applications

This book provides a comprehensive account of a modern generalisation of differential geometry in which coordinates need not commute. This requires a reinvention of differential geometry that refers only to the coordinate algebra, now possibly noncommutative, rather than to actual points. Such a theory is needed for the geometry of Hopf algebras or quantum groups, which provide key examples, as well as in physics to model quantum gravity effects in the form of quantum spacetime. The mathematical formalism can be applied to any algebra and includes graph geometry and a Lie theory of finite groups. Even the algebra of 2 x 2 matrices turns out to admit a rich moduli of quantum Riemannian geometries. The approach taken is a `bottom up' one in which the different layers of geometry are built up in succession, starting from differential forms and proceeding up to the notion of a quantum `Levi-Civita' bimodule connection, geometric Laplacians and, in some cases, Dirac operators. The book also covers elements of Connes' approach to the subject coming from cyclic cohomology and spectral triples. Other topics include various other cohomology theories, holomorphic structures and noncommutative D-modules. A unique feature of the book is its constructive approach and its wealth of examples drawn from a large body of literature in mathematical physics, now put on a firm algebraic footing. Including exercises with solutions, it can be used as a textbook for advanced courses as well as a reference for researchers.

An Introduction to Genetic Algorithms

\"Ubuntu Administration Essentials\" \"Ubuntu Administration Essentials\" delivers a comprehensive, in-depth guide to mastering Ubuntu at all enterprise levels. Meticulously structured, this book covers the full spectrum from systems architecture and advanced installation automation to contemporary trends in security, networking, and orchestration. Readers will navigate the intricacies of Ubuntu's lineage, kernel configuration, user-space isolation, and hardware integration, gaining both foundational knowledge and expert insights into optimizing and customizing systems for various environments. The book excels in its pragmatic treatment of advanced deployment strategies, automated installation, and state-of-the-art provisioning techniques for physical, virtual, and cloud infrastructures. Readers will uncover robust frameworks for identity management, user authentication, and authorization, including LDAP, Active Directory integration, PAM configuration, and sophisticated sudo policies. Significant attention is given to maintaining a secure, compliant, and resilient posture through backup automation, security hardening, vulnerability scanning, and trusted boot mechanisms. Beyond core administration, the chapters unfold powerful workflows for package management, network engineering, monitoring, logging, and

troubleshooting at scale. With dedicated attention to configuration management tools—such as Ansible, Puppet, Chef, and infrastructure-as-code paradigms—\"Ubuntu Administration Essentials\" equips system administrators and IT professionals with the expertise to build, maintain, and orchestrate reliable Ubuntu-based infrastructures. Whether architecting large-scale deployments or assuring business continuity, this book is an indispensable companion for modern Linux professionals.

Quantum Riemannian Geometry

The publication of the first book by Kenneth Arrow and Hervé Raynaud, in 1986, led to an important wave of research in the field of axiomatic approach applied to managerial logic. Managerial Logic summarizes the prospective results of this research and offers consultants, researchers, and decision makers a unified framework for handling the difficult decisions they face. Based on confirmed results of experimental psychology, this book places the problem in a phenomenological framework and shows how the influence of traditional methods has slowed the effective resolution of these problems. It provides a panorama of principal concepts and theorems demonstrated on axiomatized methods to guide readers in choosing the best alternatives and rejecting the worst ones. Finally, it describes the obtained extensions, often paradoxical, reached when these results are extended to classification problems. The objective of this book is also to allow the decision maker to find his way through the plethora of “multicriterion methods” promoted by council organizations. The meta-method it proposes will allow him to distinguish the wheat from the chaff. The collaboration with Kenneth Arrow comes essentially from the fact that his work influenced all subsequent works quoted in this book. His famous impossibility theorem, his gem of a PhD thesis, and his various other works resulted in him receiving the Nobel Prize for economy just before meeting Hervé Raynaud who was at that time a visiting professor at Berkeley University in California. Their mutual publications serve as the basis for the axiomatic approach in multicriterion decision-making.

Ubuntu Administration Essentials

Describes how patterns of information, knowledge, and cultural production are changing. The author shows that the way information and knowledge are made available can either limit or enlarge the ways people create and express themselves. He describes the range of legal and policy choices that confront.

Managerial Logic

The advent of molecular technologies has lead to a rapid acceleration in the cytogenetic study of malignancy and acquired abnormalities. This guide emphasizes such methodology throughout, though not forgetting classical techniques.

The Wealth of Networks

From the reviews: \"The material is self-contained, but it is technical and a solid foundation in probability and queuing theory is beneficial to prospective readers. [... It] is intended to be accessible to those with less background. This book is a must to researchers and graduate students interested in these areas.\" ISI Short Book Reviews

Human Cytogenetics

This Memoir provides a comprehensive review of the Precambrian basins of the four Archaean nuclei of India (Dharwar, Bastar, Singhbhum and Aravalli-Bundelkhand), encompassing descriptions of the time-space distribution of sedimentary-volcanic successions, the interrelationship between tectonics and sedimentation, and basin histories. Studies of 22 basins within the framework of an international basin classification scheme deepen an understanding of the basin architecture especially for cratonic basins. Most Indian sedimentary

successions formed as cratonic to extensional-margin rift and thermal-sag basins, some reflecting mantle plume movement, subcrustal heating or far-field stress. This Memoir shows that Phanerozoic plate-tectonic and sequence stratigraphic principles can be applied to the Precambrian basins of large Archaean provinces. The differences between the stratigraphic architecture of the Indian Precambrian and examples of Phanerozoic basin-fill successions elsewhere are ascribed to variable rates and intensities of the controls on accommodation and sediment supply, and changes inherent in the evolution of the hydrosphere-atmosphere and biosphere systems.

Stochastic-Process Limits

Contains papers from the 7th International Conference on Difference Equations held at Hunan University (Changsa, China), a satellite conference of ICM2002 Beijing. This book includes articles that cover stability, chaos, symmetries, boundary value problems and bifurcations for discrete dynamical systems, and difference-differential equations.

Precambrian Basins of India

Although Rock Mechanics addresses many of the rock mechanics issues which arise in underground mining engineering, it is not a text exclusively for mining applications. It consists of five categories of topics on the science and practice of rock engineering: basic engineering principles relevant to rock mechanics; mechanical properties of rock and rock masses; design of underground excavations in various rock mass conditions; mining methods and their implementation; and guidelines on rock mechanics practice. Throughout the text, and particularly in those sections concerned with excavation design and design of mining layouts, reference is made to computational methods of analysis of stress and displacement in a rock mass. The principles of various computational schemes, such as boundary element, finite element and distinct element methods, are considered. This new edition has been completely revised to reflect the notable innovations in mining engineering and the remarkable developments in the science of rock mechanics and the practice of rock engineering that have taken place over the last two decades. Based on extensive professional, research and teaching experience, this book will provide an authoritative and comprehensive text for final year undergraduates and commencing postgraduate students. For professional practitioners, not only will it be of interest to mining and geological engineers but also to civil engineers, structural and mining geologists and geophysicists as a standard work for professional reference purposes. B.H.G. Brady is Emeritus Professor and former Dean of the Faculty of Engineering, Computing and Mathematics at The University of Western Australia, and a consulting rock mechanics engineer. E.T. Brown is Senior Consultant, Golder Associates Pty Ltd, Brisbane, Australia and formerly Senior Deputy Vice-Chancellor of The University of Queensland, Australia.

Difference and Differential Equations

The beauty and the mystery surrounding the interplay between mathematics and physics is captured by E. Wigner's famous expression, ``The unreasonable effectiveness of mathematics''. We don't know why, but physical laws are described by mathematics, and good mathematics sooner or later finds applications in physics, often in a surprising way. In this sense, mathematical physics is a very old subject-as Egyptian, Phoenician, or Greek history tells us. But mathematical physics is a very modern subject, as any working mathematician or physicist can witness. It is a challenging discipline that has to provide results of interest for both mathematics and physics. Ideas and motivations from both these sciences give it a vitality and freshness that is difficult to find anywhere else. One of the big physical revolutions in the twentieth century, quantum physics, opened a new magnificent era for this interplay. With the appearance of noncommutative analysis, the role of classical calculus has been taken by commutation relations, a subject still growing in an astonishing way. A good example where mathematical physics showed its power, beauty, and interdisciplinary character is the Doplicher-Haag-Roberts analysis of superselection sectors in the late 1960s. Not only did this theory explain the origin of statistics and classify it, but year after year, new connections

have merged, for example with Tomita-Takesaki modular theory, Jones theory of subfactors, and Doplicher-Roberts abstract duality for compact groups. This volume contains the proceedings of the conference, ``Mathematical Physics in Mathematics and Physics", dedicated to Sergio Doplicher and John E. Roberts held in Siena, Italy. The articles offer current research in various fields of mathematical physics, primarily concerning quantum aspects of operator algebras.

Rock Mechanics

Mathematical Physics in Mathematics and Physics
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