Practical Load Balancing Ride The Performance Tiger Experts Voice In Networking

Analytics for the public sector involves the application of operations research and statistical techniques to solve various problems existing outside of the private sector. The use of analytics for the public sector results in more efficient and effective services for the clients and users of these systems. Analytics, Operations, and Strategic Decision Making in the Public Sector is an essential reference source that discusses analytics applications in various public sector organizations, and addresses the difficulties associated with the design and operation of these systems including multiple conflicting objectives, uncertainties and resulting risk, ill-structured nature, combinatorial design aspects, and scale. Featuring research on topics such as analytical modeling techniques, data mining, and statistical analysis, this book is ideally designed for academicians, educators, researchers, students, and public sector professionals including those in local, state, and federal governments; criminal justice systems; healthcare; energy and natural resources; waste management; emergency response; and the military.

"I encourage all those who will read this book, will promote both directly and indirectly the use and awareness of wind energy as a clean and viable source of electric power." —THOMAS ACKERMAN, Ph.D., Wind Power Author and Founder, Energynautics GmbH, Germany "Those who will read this book, will be well prepared to work in the wind power sector and participate in the important task to develop a renewable energy system which can stop the global climate change." —TORE WIZELIUS, Wind Power Author, Teacher and Wind Project Developer, Sweden "This book provides a valuable technical information on small wind turbines that will allow students to become amateur wind engineers and entrepreneurs in this growing industry." —Urban Green Energy, USA This comprehensive textbook, now in its third edition, incorporates significant improvements based on the readers' suggestions and demands. It provides engineering students with the principles of different types of grid connected renewable energy sources and, in particular, the detailed underpinning knowledge required to understand the different types of grid connected wind turbines. New to the Third Edition • Revised Chapter 1 providing considerable amount of current information and technologies related to various types of renewable energy technologies • One new chapter on 'Electronics in Renewable Energy Systems' (Chapter 15) Designed as a textbook for Renewable Energy courses offered in the most of the Indian universities, the book not only serves for the one-semester stream-specific course on Renewable Energy or Wind Energy for diploma and senior level undergraduate students of electrical, mechanical, electronics and instrumentation engineering, but also for the postgraduate engineering students undertaking energy studies. TARGET AUDIENCE • B.Tech/M.Tech (EEE/ECE/ME) • Diploma (engineering)

Annotation The four volume set LNAI 3681, LNAI 3682, LNAI 3683, and LNAI 3684constitute the refereed proceedings of the 9th International Conferenceon Knowledge-Based Intelligent Information and Engineering Systems, KES2005, held in Melbourne, Australia in September 2005. The 716 revised papers presented were carefully reviewed and selected fromnearly 1400 submissions. The papers present a wealth of original researchresults from the field of intelligent information processing in thebroadest sense; topics covered in the first volume are intelligentdesign support systems, data engineering, knowledge engineering andontologies, knowledge discovery and data mining, advanced networkapplication, approaches and methods of security engineering, chancediscovery, information hiding and multimedia signal processing, softcomputing techniques and their applications, intelligent agenttechnology and applications, smart systems, knowledge - based interfacesystems, intelligent information processing for remote sensing, intelligent human computer interaction systems, experience managementand knowledge management, network (security) real-time and faulttolerant systems, advanced network application and real-time systems, and intelligent watermarking algorithms.

A guide to the applications of content aware networking such as server load balancing, firewall load balancing, Web caching and Web cache redirection. This is growing to a $1 billion market. The authors are specialists from Nortel.

Over the last 25 years, cognitive load theory has become one of the world's leading theories of instructional design. It is heavily researched by many educational and psychological researchers and is familiar to most practicing instructional designers, especially designers using computer and related technologies. The theory can be divided into two aspects that closely inter-relate and influence each other: human cognitive architecture and the instructional designs and prescriptions that flow from that architecture. The cognitive architecture is based on biological evolution. The resulting description of human cognitive architecture is novel and accordingly, the instructional designs that flow from the architecture also are novel. All instructional procedures are routinely tested using randomized, controlled experiments. Roughly 1/3 of the book will be devoted to cognitive architecture and its evolutionary base with 2/3 devoted to the instructional implications that follow, including technology-based instruction. Researchers, teachers and instructional designers need the book because of the explosion of interest in cognitive load theory over the last few years. The theory is represented in countless journal articles but a detailed, modern overview presenting the theory and its implications in one location is not available.

Popular Mechanics inspires, instructs and influences readers to help them master the modern world. Whether it's practical DIY home-improvement tips, gadgets and digital technology, information on the newest cars or the latest breakthroughs in science -- PM is the ultimate guide to our high-tech lifestyle.

This book communicates the latest findings in pediatric orthopedics and answers key everyday questions in the field in an informative, readily understandable manner. The scope is comprehensive, encompassing all aspects of diagnosis and therapy. After an opening section on basic principles, the two main sections discuss diseases and injuries by site and cover systemic conditions including trauma, infections, juvenile rheumatoid arthritis, tumors and hereditary diseases. The book is the translation of the latest edition of the well-known classic Kinderorthopädie in der Praxis, which presents the collected knowledge of experts from Basel University Children's Hospital – Fritz Hefti and his co-workers Reinald Brunner, Carol Claudius Hasler, and Gernot Jundt. This edition has been revised and updated in a variety of ways. New findings are incorporated into all chapters, important advances in treatment are presented and the latest concepts in tumor diagnosis and neuro-orthopedics are discussed. The book contains more than 150 additional illustrations, including new clinical images and radiographs and many further amusing cartoons by Franz Freuler. The aim is to make children's orthopedics fun – in both practice and theory! The book has received several awards.

RIDE provides an exchange of new ideas, developments and experiences on issues related to Web services, e-commerce, and digital governments. The RIDE 2004 proceedings covers Web

service constraint mechanisms, security in Web services, service discovery, publishing and XML versioning.

Autonomous agents or multiagent systems are computational systems in which several computational agents interact or work together to perform some set of tasks. These systems may involve computational agents having common goals or distinct goals. Real-Time Search for Learning Autonomous Agents focuses on extending real-time search algorithms for autonomous agents and for a multiagent world. Although real-time search provides an attractive framework for resource-bounded problem solving, the behavior of the problem solver is not rational enough for autonomous agents. The problem solver always keeps the record of its moves and the problem solver cannot utilize and improve previous experiments. Other problems are that although the algorithms interleave planning and execution, they cannot be directly applied to a multiagent world. The problem solver cannot adapt to the dynamically changing goals and the problem solver cannot cooperatively solve problems with other problem solvers. This book deals with all these issues. Real-Time Search for Learning Autonomous Agents serves as an excellent resource for researchers and engineers interested in both practical references and some theoretical basis for agent/multiagent systems. The book can also be used as a text for advanced courses on the subject.

From an industry insider--a close look at high-performance,end-to-end switching solutions Load balancers are fast becoming an indispensable solution forhandling the huge traffic demands of the Web. Their ability tosolve a multitude of network and server bottlenecks in the Internetage ranges from dramatic improvements in server farm scalability toremoving the firewall as a network bottleneck. This book provides adetailed, up-to-date, technical discussion of this fast-growing,multibillion dollar market, covering the full spectrum oftopics--from server and firewall load balancing to transparentcache switching to global server load balancing. In the process,the author delivers insight into the way new technologies aredeployed in network infrastructure and how they work. Written by anindustry expert who hails from a leading Web switch vendor, thisbook will help network and server administrators improve thescalability, availability, manageability, and security of theirservers, firewalls, caches, and Web sites.

For weeks, months—nay!—from the very moment you were born, you've felt it calling to you. At long last you'll be united with the programming language you've been longing for: Clojure! As a Lisp-style functional programming language, Clojure lets you write robust and elegant code, and because it runs on the Java Virtual Machine, you can take advantage of the vast Java ecosystem. Clojure for the Brave and True offers a "dessert-first" approach: you'll start playing with real programs immediately, as you steadily acclimate to the abstract but powerful features of Lisp and functional programming. Inside you'll find an offbeat, practical guide to Clojure, filled with quirky sample programs that catch cheese thieves and track glittery vampires. Learn how to: –Wield Clojure's core functions –Use Emacs for Clojure development –Write macros to modify Clojure itself –Use Clojure's tools to simplify concurrency and parallel programming Clojure for the Brave and True assumes no prior experience with Clojure, the Java Virtual Machine, or functional programming. Are you ready, brave reader, to meet your true destiny? Grab your best pair of parentheses—you're about to embark on an epic journey into the world of Clojure!

The emergence of the cloud and modern, fast corporate networks demands that you perform judicious balancing of computational loads. Practical Load Balancing presents an entire analytical framework to increase performance not just of one machine, but of your entire infrastructure. Practical Load Balancing starts by introducing key concepts and the tools you'll need to tackle your load-balancing issues. You'll travel through the IP layers and learn how they can create increased network traffic for you. You'll see how to account for persistence and state, and how you can judge the performance of scheduling algorithms. You'll then learn how to avoid performance degradation and any risk of the sudden disappearance of a service on a server. If you're concerned with running your load balancer for an entire network, you'll find out how to set up your network topography, and condense each topographical variety into recipes that will serve you in different situations. You'll also learn about individual servers, and load balancers that can perform cookie insertion or improve your SSL throughput. You'll also explore load balancing in the modern context of the cloud. While load balancers need to be configured for high availability once the conditions on the network have been created, modern load balancing has found its way into the cloud, where good balancing is vital for the very functioning of the cloud, and where IPv6 is becoming ever more important. You can read Practical Load Balancing from end to end or out of sequence, and indeed, if there are individual topics that interest you, you can pick up this book and work through it once you have read the first three chapters.

Rotating machinery (eg pumps, motors, compressors) is normally manufactured to precise measurements but there comes a point when the costs of manufacture mean that further precision is not cost-effective and thus any slight imbalance inherent in the machine will need to be attended to after manufacture. When such machinery is in operation, often at very high speeds of thousands of revs per minute, any imbalance will set up vibration and often noise. In addition, such imbalance will cause extra wear and loss of efficiency in the machine. The answer is to balance the affected parts of the machine so that it operates smoothly and efficiently. This book is a practical account of such balancing techniques e.g how to balance a rotor, how to set up and verify performance of a balancing machine, and procedures for on-site balancing. In addition, other common causes of vibration will be covered e.g. misalignment, bad bearings and looseness. This book is the distillation of a successful course run by the author and developed over 20 years. University engineering departments do not teach balancing techniques beyond the very basic, and there is a need for educators and engineers to have a practical book available on the topic. · A practical book which will help the reader understand the importance of balance in today's high technology world · Outlines the history of dynamic balancing and other vibration reduction techniques · Profusely illustrated throughout

Load balancing improves network performance by distributing traffic efficiently so that individual servers are not overwhelmed by sudden fluctuations in activity. Server Load Balancing is a guide to this critical component of high availability, clustering, and fault tolerance, all of which provide the infrastructure for reliable Internet sites and large corporate networks. Much of the information on load balancing comes from vendor-specific manuals that use inconsistent terminology and are often biased toward the products they cover. Server Load Balancing explains to engineers and technicians the concepts and terminology of load balancing and offers practical guidance for planning and implementing it in almost any environment. It includes a configuration guide with diagrams and sample configurations for installing, configuring, and maintaining products from the four major vendors: Alteon WebSystems Cisco's CSS Series (formerly ArrowPoint) F5's BIG-IP the Foundry ServerIron series By comparing several load balancing products, you'll gain a deeper understanding of the technology and how best to use it to improve your network performance. No system administrator responsible for traffic management should be without this practical guide.

Riding motorcycles is fun, but author Ken Condon maintains that there is a state of consciousness to be achieved beyond the simple pleasure of riding down the road. Riding in the Zone helps riders find that state of being. It's the experience of being physically and mentally present in the moment, where every sense is sharply attuned to the ride. Your mind becomes silent to the chatter of daily life, and everyday problems seem to dissolve. You feel a deeper appreciation for life. Your body responds to this state of being with precise, fluid movements, you feel in balance, your muscles are relaxed, and it seems as though every input you make is an expression of mastery. This is "the Zone." Condon identifies all of the factors that affect entering the Zone and addresses each one individually, from the development of awareness and mental skills to mastering physical control of the motorcycle. At the end of each chapter are drills designed to transform the book's ideas into solid, practical riding skills. Riding in the Zone takes riders to the next level in their skill set.

This volume presents the proceedings of the Fourth International Conference on Data Organization and Algorithms, FODO '93, held in Evanston, Illinois. FODO '93 reflects the maturing of the database field which hasbeen driven by the enormous growth in the range of applications for databasesystems. The "non-standard" applications of the not-so-distant past, such ashypertext, multimedia, and scientific and engineering databases, now provide some of the central motivation for the advances in hardware technology and data organizations and algorithms. The volume contains 3 invited talks, 22 contributed papers, and 2 panel papers. The contributed papers are grouped into parts on multimedia, access methods, text processing, query processing, industrial applications, physical storage, andnew directions.

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The overwhelming majority of a software system's lifespan is spent in use, not in design or implementation. So, why does conventional wisdom insist that software engineers focus primarily on the design and development of large-scale computing systems? In this collection of essays and articles, key members of Google's Site Reliability Team explain how and why their commitment to the entire lifecycle has enabled the company to successfully build, deploy, monitor, and maintain some of the largest software systems in the world. You'll learn the principles and practices that enable Google engineers to make systems more scalable, reliable, and efficient—lessons directly applicable to your organization. This book is divided into four sections: Introduction—Learn what site reliability engineering is and why it differs from conventional IT industry practices Principles—Examine the patterns, behaviors, and areas of concern that influence the work of a site reliability engineer (SRE) Practices—Understand the theory and practice of an SRE's day-to-day work: building and operating large distributed computing systems Management—Explore Google's best practices for training, communication, and meetings that your organization can use

This work draws together research from 15 countries across Asia and Africa to promote understanding of how gender affects access to transport. It looks at what steps can be taken at community, provider and policy levels to improve the situation.

Assistive Technology (AT) is an umbrella term indicating any product or technology-based service that enables people of all ages with activity limitations in their daily life, education, work or leisure. It is a highly interdisciplinary field, encompassing research, development, manufacture, supply, provision and policy. This book presents the proceedings of the 12th biennial European conference of the Association for the Advancement of Assistive Technology in Europe, AAATE 2013, held in Vilamoura, Portugal, in September 2013. The full papers included here cover a diverse range of subjects, including: ageing, disability and technology; accessibility in Europe; ambient assisted living; AT and Cloud computing; communication access for all; monitoring and telecare; and user perspective, to name but a few. The aim of the AAATE conference is to promote a more effective dialogue between manufacturers, researchers, developers, professionals and end users, and this book will be of interest to all those directly or indirectly involved in the field of AT.

Runners, cyclists, swimmers, rowers, triathletes, and ultradistance athletes must sustain performance at a high level to come out on top. Developing Endurance shows how to achieve optimal stamina to race your best through science-based aerobic, anaerobic, and resistance training. Written by 11 top experts in the National Strength and Conditioning Association, the top sport conditioning organization in the world, this guide provides both the background information and the exercises, drills, workouts, and programs for ultimate results. Athletes and coaches will appreciate the assessment tools, analyses, and instruction to define specific needs and establish effective training goals. Armed with these tools and information, you can create the ideal personalized training program for your sport and avoid lengthy plateaus while taking performance to the highest level.

This invaluable roadmap for startup engineers reveals how to successfully handle web application scalability challenges to meet increasing product and traffic demands. Web Scalability for Startup Engineers shows engineers working at startups and small companies how to plan and implement a comprehensive scalability strategy. It presents broad and holistic view of infrastructure and architecture of a scalable web application. Successful startups often face the challenge of scalability, and the core concepts driving a scalable architecture are language and platform agnostic. The book covers scalability of HTTP-based systems (websites, REST APIs, SaaS, and mobile application backends), starting with a high-level perspective before taking a deep dive into common challenges and issues. This approach builds a holistic view of the problem, helping you see the big picture, and then introduces different technologies and best practices for solving the problem at hand. The book is enriched with the author's real-world experience and expert advice, saving you precious time and effort by learning from others' mistakes and successes. Language-agnostic approach addresses universally challenging concepts in Web development/scalability—does not require knowledge of a particular language Fills the gap for engineers in startups and smaller companies who have limited means for getting to the next level in terms of accomplishing scalability Strategies presented help to decrease time to market and increase the efficiency of web applications

Ten Strategies of a World-Class Cyber Security Operations Center conveys MITRE's accumulated expertise on enterprise-grade computer network defense. It covers ten key qualities of leading Cyber Security Operations Centers (CSOCs), ranging from their structure and organization, to processes that best enable smooth operations, to approaches

that extract maximum value from key CSOC technology investments. This book offers perspective and context for key decision points in structuring a CSOC, such as what capabilities to offer, how to architect large-scale data collection and analysis, and how to prepare the CSOC team for agile, threat-based response. If you manage, work in, or are standing up a CSOC, this book is for you. It is also available on MITRE's website, www.mitre.org.

This volume presents selected contributions by top researchers in the field of operations research, originating from the XVI Congress of APDIO. It provides interesting findings and applications of operations research methods and techniques in a wide variety of problems. The contributions address complex real-world problems, including inventory management with lateral transshipments, sectors and routes in solid-waste collection and production planning for perishable food products. It also discusses the latest techniques, making the volume a valuable tool for researchers, students and practitioners who wish to learn about current trends. Of particular interest are the applications of nonlinear and mixed-integer programming, data envelopment analysis, clustering techniques, hybrid heuristics, supply chain management and lot sizing, as well as job scheduling problems. This biennial conference, organized by APDIO, the Portuguese Association of Operational Research, held in Bragança, Portugal, in June 2013, presented a perfect opportunity to discuss the latest development in this field and to narrow the gap between academic researchers and practitioners.

For more than 20 years, Network World has been the premier provider of information, intelligence and insight for network and IT executives responsible for the digital nervous systems of large organizations. Readers are responsible for designing, implementing and managing the voice, data and video systems their companies use to support everything from business critical applications to employee collaboration and electronic commerce.

Every other day we hear about new ways to put deep learning to good use: improved medical imaging, accurate credit card fraud detection, long range weather forecasting, and more. PyTorch puts these superpowers in your hands, providing a comfortable Python experience that gets you started quickly and then grows with you as you—and your deep learning skills—become more sophisticated. Deep Learning with PyTorch will make that journey engaging and fun. Summary Every other day we hear about new ways to put deep learning to good use: improved medical imaging, accurate credit card fraud detection, long range weather forecasting, and more. PyTorch puts these superpowers in your hands, providing a comfortable Python experience that gets you started quickly and then grows with you as you—and your deep learning skills—become more sophisticated. Deep Learning with PyTorch will make that journey engaging and fun. Foreword by Soumith Chintala, Cocreator of PyTorch. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Although many deep learning tools use Python, the PyTorch library is truly Pythonic. Instantly familiar to anyone who knows PyData tools like NumPy and scikit-learn, PyTorch simplifies deep learning without sacrificing advanced features. It's excellent for building quick models, and it scales smoothly from laptop to enterprise. Because companies like Apple, Facebook, and JPMorgan Chase rely on PyTorch, it's a great skill to have as you expand your career options. It's easy to get started with PyTorch. It minimizes cognitive overhead without sacrificing the access to advanced features, meaning you can focus on what matters the most - building and training the latest and greatest deep learning models and contribute to making a dent in the world. PyTorch is also a snap to scale and extend, and it partners well with other Python tooling. PyTorch has been adopted by hundreds of deep learning practitioners and several first-class players like FAIR, OpenAI, FastAI and Purdue. About the book Deep Learning with PyTorch teaches you to create neural networks and deep learning systems with PyTorch. This practical book quickly gets you to work building a real-world example from scratch: a tumor image classifier. Along the way, it covers best practices for the entire DL pipeline, including the PyTorch Tensor API, loading data in Python, monitoring training, and visualizing results. After covering the basics, the book will take you on a journey through larger projects. The centerpiece of the book is a neural network designed for cancer detection. You'll discover ways for training networks with limited inputs and start processing data to get some results. You'll sift through the unreliable initial results and focus on how to diagnose and fix the problems in your neural network. Finally, you'll look at ways to improve your results by training with augmented data, make improvements to the model architecture, and perform other fine tuning. What's inside Training deep neural networks Implementing modules and loss functions Utilizing pretrained models from PyTorch Hub Exploring code samples in Jupyter Notebooks About the reader For Python programmers with an interest in machine learning. About the author Eli Stevens had roles from software engineer to CTO, and is currently working on machine learning in the self-driving-car industry. Luca Antiga is cofounder of an AI engineering company and an AI tech startup, as well as a former PyTorch contributor. Thomas Viehmann is a PyTorch core developer and machine learning trainer and consultant. consultant based in Munich, Germany and a PyTorch core developer. Table of Contents PART 1 - CORE PYTORCH 1 Introducing deep learning and the PyTorch Library 2 Pretrained networks 3 It starts with a tensor 4 Real-world data representation using tensors 5 The mechanics of learning 6 Using a neural network to fit the data 7 Telling birds from airplanes: Learning from images 8 Using convolutions to generalize PART 2 - LEARNING FROM IMAGES IN THE REAL WORLD: EARLY DETECTION OF LUNG CANCER 9 Using PyTorch to fight cancer 10 Combining data sources into a unified dataset 11 Training a classification model to detect suspected tumors 12 Improving training with metrics and augmentation 13 Using segmentation to find suspected nodules 14 End-to-end nodule analysis, and where to go next PART 3 - DEPLOYMENT 15 Deploying to production

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