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Guide to Computer Network Security Joseph Migga Kizza 2020-06-03 This timely textbook presents a comprehensive guide to the core topics in cybersecurity, covering issues of security that extend beyond traditional computer networks to the ubiquitous mobile communications and online social networks that have become part of our daily lives. In the context of our growing dependence on an ever-changing digital ecosystem, this book stresses the importance of security awareness, whether in our homes, our businesses, or our public spaces. This fully updated new edition features new material on the security issues raised by blockchain technology, and its use in logistics, digital ledgers, payments systems, and digital contracts. Topics and features: Explores the full range of security risks and vulnerabilities in all connected digital systems Inspires debate over future developments and improvements necessary to enhance the security of personal, public, and private enterprise systems Raises thought-provoking questions regarding legislative, legal, social, technical, and ethical challenges, such as the tension between privacy and security Describes the fundamentals of traditional computer network security, and common threats to security Reviews the current landscape of tools, algorithms, and professional best practices in use to maintain security of digital systems Discusses the security issues introduced by the latest generation of network technologies, including mobile systems, cloud computing, and blockchain Presents exercises of varying levels of difficulty at the end of each chapter, and concludes with a diverse selection of practical projects Offers supplementary material for students and instructors at an associated website, including slides, additional projects, and syllabus suggestions This important textbook/reference is an invaluable resource for students of computer science, engineering, and information management, as well as for practitioners working in data- and information-intensive industries.

A Vast Machine Paul N. Edwards 2010-03-12 The science behind global warming, and its history: how scientists learned to understand the atmosphere, to measure it, to trace its past, and to model its future. Global warming skeptics often fall back on the argument that the scientific case for global warming is all model predictions, nothing but simulation; they warn us that we need to wait for real data, "sound science." In A Vast Machine Paul Edwards has news for these skeptics: without models, there are no data. Today, no collection of signals or observations—even from satellites, which can "see" the whole planet with a single instrument—becomes global in time and space without passing through a series of data models. Everything we know about the world's climate we know through models. Edwards offers an engaging and innovative history of how scientists learned to understand the atmosphere—to measure it, trace its past, and model its future.

Learning SQL Alan Beaulieu 2009-04-11 Updated for the latest database management systems -- including MySQL 6.0, Oracle 11g, and Microsoft's SQL Server 2008 -- this introductory guide will get you up and running with SQL quickly. Whether you need to write database applications, perform administrative tasks, or generate reports, Learning SQL, Second Edition, will help you easily master all the SQL fundamentals. Each chapter presents a self-contained lesson on a key SQL concept or technique, with numerous illustrations and annotated examples. Exercises at the end of each chapter let you practice the skills you learn. With this book, you will: Move quickly through SQL basics and learn several advanced features Use SQL data statements to generate, manipulate, and retrieve data Create database objects, such as tables, indexes, and constraints, using SQL schema statements Learn how data sets interact with queries, and understand the importance of subqueries Convert and manipulate data with SQL's built-in functions, and use conditional logic in data statements Knowledge of SQL is a must for interacting with data. With Learning SQL, you'll quickly learn how to put the power and flexibility of this language to work.

Encyclopaedia of Historical Metrology, Weights, and Measures Jan Gyllenbok 2018-04-11 This first of three volumes starts with a short introduction to historical metrology as a scientific discipline and goes on with an anthology of acient and modern measurement systems of all kind, scientific measures, units of time, weights, currencies etc. It concludes with an exhaustive list of references. Units of measurement are of vital importance in every civilization through history. Since the early ages, man has through necessity devised various measures to assist him in everyday life. They have enabled and continue to enable us to trade in commonly and equitably understood amounts, and to investigate, understand, and control the chemical, physical, and biological processes of the natural world. The essence of the work is an alphabetically ordered, comprehensive list of measurement nomenclature, units and scales. It provides an understanding of almost all quantitative expressions observed in all imaginable situations, including spelling variants and the abbreviations and symbols for units, and various acronyms used in metrology. It will be of use not only to historians of

science and technology, but also to economic and social historians and should be in every major academic and national library as standard reference work on the topic.

Global Satellite Meteorological Observation (GSMO) Applications Stoj?e Dimov Il?ev 2018-12-05 This book presents principal structures of space systems functionality of meteorological networks, media and applications for modern remote sensing, transmission systems, meteorological ground and users segments and transferring weather data from satellite to the ground infrastructures and users. The author presents techniques and different modes of satellite image interpretation, type of satellite imagery, spectral imaging properties, and enhancement of imaging technique, geo-location and calibration, atmospheric and surface phenomena. Several satellite meteorological applications are introduced including common satellite remote sensing applications, weather analysis, warnings and prediction, observation and measurements of meteorological variables, atmosphere and surface applications, ocean and coastal applications, land, agriculture and forestry applications, and maritime and aviation satellite weather applications. The author also covers ground segment and user segment in detail. The final chapter looks to the future, covering possible space integrations in meteorological and weather observation.This is a companion book of Global Satellite Meteorological Observation Theory (Springer), which provides the following topics: Evolution of meteorological observations and history satellite meteorology Space segment with satellite orbits and meteorological payloads Analog and digital transmission, type of modulations and broadcasting systems Atmospheric radiation, satellite meteorological parameters and instruments Meteorological antenna systems and propagation

The Vixen Star Book User Guide James Chen 2015-10-01 This book is for anyone who owns, or is thinking of owning, a Vixen Star Book Ten telescope mount or its predecessor. A revolution in amateur astronomy has occurred in the past decade with the wide availability of high tech, computer-driven, Go-To telescopes. Vixen Optics is leading the way by offering the Star Book Ten system, with its unique star map graphics software. The Star Book Ten is the latest version of computer telescope control using star map graphics as a user interface, first introduced in the original Star Book first offered in 2003. The increasingly complicated nature of this software means that learning to optimize this program is not straightforward, and yet the resulting views when all features are correctly deployed can be phenomenal. After a short history of computerized Go-To telescopes for the consumer amateur astronomer market, Chen offers a treasury of technical information. His advice, tips, and solutions aid the user in getting the most out of the Star Book Ten system in observing sessions.

Biosystems Engineering: Biofactories for Food Production in the Century XXI Ramon Guevara-Gonzalez 2014-01-24 This book presents new food production systems (for plants and animals) involving agrochemicals that increase in a controlled manner the bioactives content, under greenhouse conditions. Moreover, conception and design of new instrumentation for precision agriculture and aquiculture contributing in food production is also highlighted in this book.

A Handbook of Media and Communication Research Klaus Bruhn Jensen 2013-04-15 A Handbook of Media and Communications Research presents qualitative as well as quantitative approaches to the analysis and interpretation of media, covering perspectives from both the social sciences and the humanities. The Handbook offers a comprehensive review of earlier research and a set of guidelines for how to think about, plan, and carry out studies of media in different social and cultural contexts. Divided into sections on the history, systematics and pragmatics of research, and written by internationally acknowledged specialists in each area, the Handbook will be a standard reference work for students and researchers.

Raspberry Pi For Dummies Sean McManus 2017-08-29 Get your slice of Raspberry Pi With the invention of the unique credit card-sized single-board computer comes a new wave of hardware geeks, hackers, and hobbyists who are excited about the possibilities with the Raspberry Pi—and this is the perfect guide to get you started. With this down-to-earth book, you'll quickly discover why the Raspberry Pi is in high demand! There's a reason the Raspberry Pi sold a million units in its first year, and you're about to find out why! In Raspberry Pi For Dummies, 3rd Edition veteran tech authors Sean McManus and Mike Cook make it easier than ever to get you up and running on your Raspberry Pi, from setting it up, downloading the operating system, and using the desktop environment to editing photos, playing music and videos, and programming with Scratch—and everything in between. Covers connecting the Pi to other devices such as a keyboard, mouse, monitor, and more Teaches you basic Linux System Admin Explores creating simple hardware projects Shows you how to create web pages Raspberry Pi For Dummies, 3rd Edition makes computing as easy as pie!

Fundamentals of Digital Manufacturing Science Zude Zhou 2011-10-22 The manufacturing industry will reap significant benefits from encouraging the development of digital manufacturing science and technology. Digital Manufacturing Science uses theorems, illustrations and tables to introduce the definition, theory architecture, main content, and key technologies of digital manufacturing science. Readers will be able to develop an in-depth understanding of the emergence and the development, the theoretical background, and the techniques and methods of digital manufacturing science. Furthermore, they will also be able to use the basic theories and key technologies described in Digital Manufacturing Science to solve practical engineering problems in modern manufacturing processes. Digital Manufacturing Science is aimed at advanced undergraduate and postgraduate students, academic researchers and researchers in the manufacturing industry. It allows readers to integrate the theories and technologies described with their own research works, and to propose new ideas and new methods to improve the theory and application of digital manufacturing science.

Web Scraping with Python Ryan Mitchell 2015-06-15 Learn web scraping and crawling techniques to access unlimited data from any web source in any format. With this practical guide, you'll learn how to use Python scripts and web APIs to gather and process data from thousands—even millions—of web pages at once. Ideal for programmers, security professionals, and web administrators familiar with Python, this book not only teaches basic web scraping mechanics, but also delves into more advanced topics, such as analyzing raw data or using scrapers for frontend website testing. Code

samples are available to help you understand the concepts in practice. Learn how to parse complicated HTML pages Traverse multiple pages and sites Get a general overview of APIs and how they work Learn several methods for storing the data you scrape Download, read, and extract data from documents Use tools and techniques to clean badly formatted data Read and write natural languages Crawl through forms and logins Understand how to scrape JavaScript Learn image processing and text recognition

One Hundred Years of Chemical Warfare: Research, Deployment, Consequences Bretislav Friedrich 2017-11-26 This book is open access under a CC BY-NC 2.5 license. On April 22, 1915, the German military released 150 tons of chlorine gas at Ypres, Belgium. Carried by a long-awaited wind, the chlorine cloud passed within a few minutes through the British and French trenches, leaving behind at least 1,000 dead and 4,000 injured. This chemical attack, which amounted to the first use of a weapon of mass destruction, marks a turning point in world history. The preparation as well as the execution of the gas attack was orchestrated by Fritz Haber, the director of the Kaiser Wilhelm Institute for Physical Chemistry and Electrochemistry in Berlin-Dahlem. During World War I, Haber transformed his research institute into a center for the development of chemical weapons (and of the means of protection against them). Bretislav Friedrich and Martin Wolf (Fritz Haber Institute of the Max Planck Society, the successor institution of Haber's institute) together with Dieter Hoffmann, Jürgen Renn, and Florian Schmaltz (Max Planck Institute for the History of Science) organized an international symposium to commemorate the centenary of the infamous chemical attack. The symposium examined crucial facets of chemical warfare from the first research on and deployment of chemical weapons in WWI to the development and use of chemical warfare during the century hence. The focus was on scientific, ethical, legal, and political issues of chemical weapons research and deployment — including the issue of dual use — as well as the ongoing effort to control the possession of chemical weapons and to ultimately achieve their elimination. The volume consists of papers presented at the symposium and supplemented by additional articles that together cover key aspects of chemical warfare from 22 April 1915 until the summer of 2015.

Data Acquisition Handbook Conor Suarez 2015-03-06 This handbook on data acquisition provides up-to-date information of the field. Data acquisition systems have several applications. This book extensively elucidates the industrial applications, scientific experiments and medical applications. Veterans from across the globe have contributed significant information in this book. The book is targeted at a broad spectrum of readers including professionals who are designers or researchers in the field of data acquisition systems. It will also serve as a useful resource for graduate students as well as faculty members.

Intel Galileo and Intel Galileo Gen 2 Manoel Ramon 2014-12-31 Intel® Galileo and Intel® Galileo Gen 2: API Features and Arduino Projects for Linux Programmers provides detailed information about Intel® Galileo and Intel® Galileo Gen 2 boards for all software developers interested in Arduino and the Linux platform. The book covers the new Arduino APIs and is an introduction for developers on natively using Linux. Author Manoel Carlos Ramon is a member of the Intel Galileo development team; in this book he draws on his practical experience in working on the Galileo project as he shares the team's findings, problems, fixes, workarounds, and techniques with the open source community. His areas of expertise are wide-ranging, including Linux-embedded kernel and device drivers, C/C++, Java, OpenGL, Assembler, Android NDK/SDK/ADK, and 2G/3G/4G modem integration. He has more than 17 years of experience in research and development of mobile devices and embedded circuits. His personal blog about programming is BytesThink (www.bytesthink.com).

DICOM Structured Reporting David A. Clunie 2000

Department of Defense Dictionary of Military and Associated Terms 1984

Animal Models in Toxicology Shayne C. Gad 2006-10-30 Reflecting more than a decade's worth of changes, Animal Models in Toxicology, Second Edition is a practical guide to the common statistical problems encountered in toxicology and the methodologies that are available to solve them. The book presents a historical review of the use of animal models and an overview of broad considerations of me

Design of CMOS Phase-Locked Loops Behzad Razavi 2019-12-31 This modern, pedagogic textbook from leading author Behzad Razavi provides a comprehensive and rigorous introduction to CMOS PLL design, featuring intuitive presentation of theoretical concepts, extensive circuit simulations, over 200 worked examples, and 250 end-of-chapter problems. The perfect text for senior undergraduate and graduate students.

Mechanical Testing of Advanced Fibre Composites J M Hodgkinson 2000-10-27 Testing of composite materials can present complex problems but is essential in order to ensure the reliable, safe and cost-effective performance of any engineering structure. This essentially practical book, complied from the contributions of leading professionals in the field, describes a wide range of test methods which can be applied to various types of advanced fibre composites. The book focuses on high modulus, high strength fibre/plastic composites and also covers highly anisotrpoic materials such as carbon, aramid and glass. Engineers and designers specifying the use of materials in structures will find this book an invaluable guide to best practice throughout the range of industrial sectors where FRCs are employed.

Hydrometeorology Kevin Sene 2009-12-12 This book describes recent developments in hydrometeorological forecasting techniques for a range of timescales, from short term to seasonal and longer terms. It conveniently brings together both meteorological and hydrological aspects in a single volume.

The European Blood and Marrow Transplantation Textbook for Nurses Michelle Kenyon 2018-03-14 This book is open access under a CC BY 4.0 license. This textbook, endorsed by the European Society for Blood and Marrow Transplantation (EBMT), provides adult and paediatric nurses with a full and informative guide covering all aspects of transplant nursing, from basic principles to advanced concepts. It takes the reader on a journey through the history of transplant nursing, including essential and progressive elements to help nurses improve their knowledge and benefit the patient experience, as well as a comprehensive introduction to research and auditing methods. This new volume

specifically intended for nurses, complements the ESH-EBMT reference title, a popular educational resource originally developed in 2003 for physicians to accompany an annual training course also serving as an educational tool in its own right. This title is designed to develop the knowledge of nurses in transplantation. It is the first book of its kind specifically targeted at nurses in this specialist field and acknowledges the valuable contribution that nursing makes in this area. This volume presents information that is essential for the education of nurses new to transplantation, while also offering a valuable resource for more experienced nurses who wish to update their knowledge.

An Introduction to Applied Cognitive Psychology Anthony Esgate 2005 This book offers a student friendly review of recent research in the application of cognitive methods, theories and models to real-world scenarios.

NATO Glossary of Terms and Definitions North Atlantic Treaty Organization 2013-03-08 NATO Glossary of terms and definitions (English and French). Listing terms of military significance and their definitions for use in NATO.

Climate Change 2007 - Impacts, Adaptation and Vulnerability Martin L. Parry 2007 The Climate Change 2007 volumes of the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) provide the most comprehensive and balanced assessment of climate change available. This IPCC Working Group II volume provides a completely up-to-date scientific assessment of the impacts of climate change, the vulnerability of natural and human environments, and the potential for response through adaptation. Written by the world's leading experts, the IPCC volumes will again prove to be invaluable for researchers, students, and policymakers, and will form the standard reference works for policy decisions for government and industry worldwide.

Provincial Families of the Renaissance James S. Grubb 2019-12-01 Distinguished by its clarity and eloquence, this is a superior work of historical writing and analysis that merits comparison with the best monographs on the social history of Renaissance Italy."—Gene Brucker, University of California at Berkeley

Detecting, Modelling and Responding to Effusive Eruptions A.J.L. Harris 2016-06-28 For effusive volcanoes in resource-poor regions, there is a pressing need for a crisis response-chain bridging the global scientific community to allow provision of standard products for timely humanitarian response. As a first step in attaining this need, this Special Publication provides a complete directory of current operational capabilities for monitoring effusive eruptions. This volume also reviews the state-of-the-art in terms of satellite-based volcano hot-spot tracking and lava-flow simulation. These capabilities are demonstrated using case studies taken from well-known effusive events that have occurred worldwide over the last two decades at volcanoes such as Piton de la Fournaise, Etna, Stromboli and Kilauea. We also provide case-type response models implemented at the same volcanoes, as well as the results of a community-wide drill used to test a fully-integrated response focused on an operational hazard-GIS. Finally, the objectives and recommendations of the 'Risk Evaluation, Detection and Simulation during Effusive Eruption Disasters' working group are laid out in a statement of community needs by its members.

Building Embedded Linux Systems Karim Yaghmour 2003-04-22 Linux® is being adopted by an increasing number of embedded systems developers, who have been won over by its sophisticated scheduling and networking, its cost-free license, its open development model, and the support offered by rich and powerful programming tools. While there is a great deal of hype surrounding the use of Linux in embedded systems, there is not a lot of practical information. Building Embedded Linux Systems is the first in-depth, hard-core guide to putting together an embedded system based on the Linux kernel. This indispensable book features arcane and previously undocumented procedures for: Building your own GNU development toolchain Using an efficient embedded development framework Selecting, configuring, building, and installing a target-specific kernel Creating a complete target root filesystem Setting up, manipulating, and using solid-state storage devices Installing and configuring a bootloader for the target Cross-compiling a slew of utilities and packages Debugging your embedded system using a plethora of tools and techniques Details are provided for various target architectures and hardware configurations, including a thorough review of Linux's support for embedded hardware. All explanations rely on the use of open source and free software packages. By presenting how to build the operating system components from pristine sources and how to find more documentation or help, this book greatly simplifies the task of keeping complete control over one's embedded operating system, whether it be for technical or sound financial reasons.Author Karim Yaghmour, a well-known designer and speaker who is responsible for the Linux Trace Toolkit, starts by discussing the strengths and weaknesses of Linux as an embedded operating system. Licensing issues are included, followed by a discussion of the basics of building embedded Linux systems. The configuration, setup, and use of over forty different open source and free software packages commonly used in embedded Linux systems are also covered. uClibc, BusyBox, U-Boot, OpenSSH, thttpd, tftp, strace, and gdb are among the packages discussed.

Basics of Geomatics Mario A. Gomarasca 2009-09-18 Geomatics is a neologism, the use of which is becoming increasingly widespread, even if it is not still universally accepted. It includes several disciplines and te- niques for the study of the Earth's surface and its environments, and computer science plays a decisive role. A more meaningful and appropriate expression is G- spatial Information or GeoInformation. Geo-spatial Information embeds topography in its more modern forms (measurements with electronic instrumentation, sophisticated techniques of data analysis and network compensation, global satellite positioning techniques, laser scanning, etc.), analytical and digital photogrammetry, satellite and airborne remote sensing, numerical cartography, geographical information systems, decision support systems, WebGIS, etc. These specialized elds are intimately interrelated in terms of both the basic science and the results pursued: rigid separation does not allow us to discover several common aspects and the fundamental importance assumed in a search for solutions in the complex survey context. The objective pursued by Mario A. Gomarasca, one that is only apparently modest, is to publish an integrated text on the surveying theme, containing simple and comprehensible concepts relevant to experts in Geo-spatial Information and/or speci cally in one of the disciplines that compose it. At the same time, the book is rigorous and synthetic, describing with precision the main

instruments and methods connected to the multiple techniques available today.

The Telecommunications Handbook Jyrki T. J. Penttinen 2015-01-13 THE TELECOMMUNICATIONS HANDBOOK THE TELECOMMUNICATIONS HANDBOOK ENGINEERING GUIDELINES FOR FIXED, MOBILE AND SATELLITE SYSTEMS Taking a practical approach, The Telecommunications Handbook examines the principles and details of all the major and modern telecommunications systems currently available to industry and to end-users. It gives essential information about usage, architectures, functioning, planning, construction, measurements and optimization. The structure of the book is modular, giving both overall descriptions of the architectures and functionality of typical use cases, as well as deeper and practical guidelines for telecom professionals. The focus of the book is on current and future networks, and the most up-to-date functionalities of each network are described in sufficient detail for deployment purposes. The contents include an introduction to each technology, its evolution path, feasibility and utilization, solution and network architecture, and technical functioning of the systems (signaling, coding, different modes for channel delivery and security of core and radio system). The planning of the core and radio networks (system-specific field test measurement guidelines, hands-on network planning advices and suggestions for parameter adjustments) and future systems are also described. With contributions from specialists in both industry and academia, the book bridges the gap between communications in the academic context and the practical knowledge and skills needed to work in the telecommunications industry.

Handbook of Humanitarian Health Care Logistics George Mc Guire 2015-10-31

Learning Kali Linux Ric Messier 2018-07-17 With more than 600 security tools in its arsenal, the Kali Linux distribution can be overwhelming. Experienced and aspiring security professionals alike may find it challenging to select the most appropriate tool for conducting a given test. This practical book covers Kali's expansive security capabilities and helps you identify the tools you need to conduct a wide range of security tests and penetration tests. You'll also explore the vulnerabilities that make those tests necessary. Author Ric Messier takes you through the foundations of Kali Linux and explains methods for conducting tests on networks, web applications, wireless security, password vulnerability, and more. You'll discover different techniques for extending Kali tools and creating your own toolset. Learn tools for stress testing network stacks and applications Perform network reconnaissance to determine what's available to attackers Execute penetration tests using automated exploit tools such as Metasploit Use cracking tools to see if passwords meet complexity requirements Test wireless capabilities by injecting frames and cracking passwords Assess web application vulnerabilities with automated or proxy-based tools Create advanced attack techniques by extending Kali tools or developing your own Use Kali Linux to generate reports once testing is complete

Essential System Administration Æleen Frisch 2002-08-23 Essential System Administration,3rd Edition is the definitive guide for Unix system administration, covering all the fundamental and essential tasks required to run such divergent Unix systems as AIX, FreeBSD, HP-UX, Linux, Solaris, Tru64 and more. Essential System Administration provides a clear, concise, practical guide to the real-world issues that anyone responsible for a Unix system faces daily.The new edition of this indispensable reference has been fully updated for all the latest operating systems. Even more importantly, it has been extensively revised and expanded to consider the current system administrative topics that administrators need most. Essential System Administration,3rd Edition covers: DHCP, USB devices, the latest automation tools, SNMP and network management, LDAP, PAM, and recent security tools and techniques.Essential System Administration is comprehensive. But what has made this book the guide system administrators turn to over and over again is not just the sheer volume of valuable information it provides, but the clear, useful way the information is presented. It discusses the underlying higher-level concepts, but it also provides the details of the procedures needed to carry them out. It is not organized around the features of the Unix operating system, but around the various facets of a system administrator's job. It describes all the usual administrative tools that Unix provides, but it also shows how to use them intelligently and efficiently.Whether you use a standalone Unix system, routinely provide administrative support for a larger shared system, or just want an understanding of basic administrative functions, Essential System Administration is for you. This comprehensive and invaluable book combines the author's years of practical experience with technical expertise to help you manage Unix systems as productively and painlessly as possible.

Aircraft Digital Electronic and Computer Systems Michael H. Tooley 2007 'Aircraft Digital Electronic and Computer Systems' provides an introduction to the principles of this subject. It is written for anyone pursuing a career in aircraft maintenance engineering or a related aerospace engineering discipline.

Acronyms Abbreviations & Terms - A Capability Assurance Job Aid 2005 The FAAT List is not designed to be an authoritative source, merely a handy reference. Inclusion recognizes terminology existence, not legitimacy. Entries known to be obsolete are included bacause they may still appear in extant publications and correspondence.

Routine Data Processing in Earthquake Seismology Jens Havskov 2010-06-16 The purpose of this book is to get a practical understanding of the most common processing techniques in earthquake seismology. The book deals with manual methods and computer assisted methods. Each topic will be introduced with the basic theory followed by practical examples and exercises. There are manual exercises entirely based on the printed material of the book, as well as computer exercises based on public domain software. Most exercises are computer based. The software used, as well as all test data are available from http://extras.springer.com. This book is intended for everyone processing earthquake data, both in the observatory routine and in connection with research. Using the exercises, the book can also be used as a basis for university courses in earthquake processing. Since the main emphasis is on processing, the theory will only be dealt with to the extent needed to understand the processing steps, however references will be given to where more extensive explanations can be found. Includes: • Exercises • Test data • Public domain software (SEISAN) available from http://extras.springer.com

Introduction to Instrumentation and Measurements Robert B. Northrop 2018-09-03 Weighing in on the growth of

innovative technologies, the adoption of new standards, and the lack of educational development as it relates to current and emerging applications, the third edition of Introduction to Instrumentation and Measurements uses the authors' 40 years of teaching experience to expound on the theory, science, and art of modern instrumentation and measurements (I&M). What's New in This Edition: This edition includes material on modern integrated circuit (IC) and photonic sensors, micro-electro-mechanical (MEM) and nano-electro-mechanical (NEM) sensors, chemical and radiation sensors, signal conditioning, noise, data interfaces, and basic digital signal processing (DSP), and upgrades every chapter with the latest advancements. It contains new material on the designs of micro-electro-mechanical (MEMS) sensors, adds two new chapters on wireless instrumentation and microsensors, and incorporates extensive biomedical examples and problems. Containing 13 chapters, this third edition: Describes sensor dynamics, signal conditioning, and data display and storage Focuses on means of conditioning the analog outputs of various sensors Considers noise and coherent interference in measurements in depth Covers the traditional topics of DC null methods of measurement and AC null measurements Examines Wheatstone and Kelvin bridges and potentiometers Explores the major AC bridges used to measure inductance, Q, capacitance, and D Presents a survey of sensor mechanisms Includes a description and analysis of sensors based on the giant magnetoresistive effect (GMR) and the anisotropic magnetoresistive (AMR) effect Provides a detailed analysis of mechanical gyroscopes, clinometers, and accelerometers Contains the classic means of measuring electrical quantities Examines digital interfaces in measurement systems Defines digital signal conditioning in instrumentation Addresses solid-state chemical microsensors and wireless instrumentation Introduces mechanical microsensors (MEMS and NEMS) Details examples of the design of measurement systems Introduction to Instrumentation and Measurements is written with practicing engineers and scientists in mind, and is intended to be used in a classroom course or as a reference. It is assumed that the reader has taken core EE curriculum courses or their equivalents.

Coastal Ocean Observing Jorge E. Corredor 2018-05-30 This manual describes the wide range of electromechanical, electrochemical and electro-optical transducers at the heart of current field-deployable ocean observing instruments. Their modes of operation, precision and accuracy are discussed in detail. Observing platforms ranging from the traditional to the most recently developed are described, as are the challenges of integrating instrument suits to individual platforms. Technical approaches are discussed to address environmental constraints on instrument and platform operation such as power sources, corrosion, biofouling and mechanical abrasion. Particular attention is also given to data generated by the networks of observing platforms that are typically integrated into value-added data visualization products, including numerical simulations or models. Readers will learn about acceptable data formats and representative model products. The last section of the book is devoted to the challenges of planning, deploying and maintaining coastal ocean observing systems. Readers will discover practical applications of ocean observations in diverse fields including natural resource conservation, commerce and recreation, safety and security, and climate change resiliency and adaptation. This volume will appeal to ocean engineers, oceanographers, commercial and recreational ocean data users, observing systems operators, and advanced undergraduate and graduate students in the field of ocean observing.

Python Projects Laura Cassell 2014-12-04 A guide to completing Python projects for those ready to take their skills to the next level Python Projects is the ultimate resource for the Python programmer with basic skills who is ready to move beyond tutorials and start building projects. The preeminent guide to bridge the gap between learning and doing, this book walks readers through the "where" and "how" of real-world Python programming with practical, actionable instruction. With a focus on real-world functionality, Python Projects details the ways that Python can be used to complete daily tasks and bring efficiency to businesses and individuals alike. Python Projects is written specifically for those who know the Python syntax and lay of the land, but may still be intimidated by larger, more complex projects. The book provides a walk-through of the basic set-up for an application and the building and packaging for a library, and explains in detail the functionalities related to the projects. Topics include: *How to maximize the power of the standard library modules *Where to get third party libraries, and the best practices for utilization *Creating, packaging, and reusing libraries within and across projects *Building multi-layered functionality including networks, data, and user interfaces *Setting up development environments and using virtualenv, pip, and more Written by veteran Python trainers, the book is structured for easy navigation and logical progression that makes it ideal for individual, classroom, or corporate training. For Python developers looking to apply their skills to real-world challenges, Python Projects is a goldmine of information and expert insight.

Proceedings of the 28th International Symposium on Mine Planning and Equipment Selection - MPES 2019 Erkan Topal 2019-11-29 This conference proceedings presents the research papers in the field of mine planning and mining equipment including themes such as mine automation, rock mechanics, drilling, blasting, tunnelling and excavation engineering. The papers presents the recent advancement and the application of a range of technologies in the field of mining industry. It is of interest to the professionals who practice in mineral industry including but not limited to engineers, consultants, managers, academics, scientist, and government staff.

Internet of Things From Hype to Reality Ammar Rayes 2016-10-22 This book comprehensively describes an end-to-end Internet of Things (IoT) architecture that is comprised of devices, network, compute, storage, platform, applications along with management and security components. It is organized into five main parts, comprising of a total of 11 chapters. Part I presents a generic IoT reference model to establish a common vocabulary for IoT solutions. This includes a detailed description of the Internet protocol layers and the Things (sensors and actuators) as well as the key business drivers to realize the IoT vision. Part II focuses on the IoT requirements that impact networking protocols and provides a layer-by-layer walkthrough of the protocol stack with emphasis on industry progress and key gaps. Part III introduces the concept of Fog computing and describes the drivers for the technology, its constituent elements, and how it relates and differs from Cloud computing. Part IV discusses the IoT services platform, the cornerstone of the solution followed by the

Security functions and requirements. Finally, Part V provides a treatment of the topic of connected ecosystems in IoT along with practical applications. It then surveys the latest IoT standards and discusses the pivotal role of open source in IoT. "Faculty will find well-crafted questions and answers at the end of each chapter, suitable for review and in classroom discussion topics. In addition, the material in the book can be used by engineers and technical leaders looking to gain a deep technical understanding of IoT, as well as by managers and business leaders looking to gain a competitive edge and understand innovation opportunities for the future." Dr. Jim Spohrer, IBM "This text provides a very compelling study of the IoT space and achieves a very good balance between engineering/technology focus and business context. As such, it is highly-recommended for anyone interested in this rapidly-expanding field and will have broad appeal to a wide cross-section of readers, i.e., including engineering professionals, business analysts, university students, and professors." Professor Nasir Ghani, University of South Florida