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EMMALEE JAXON

An Introduction to Audio Content Analysis John Wiley & Sons

This open access book offers an initial introduction to programming for scientific and computational applications using the Python programming language. The presentation style is compact and example-based, making it suitable for students and researchers with little or no prior experience in programming. The book uses relevant examples from mathematics and the natural sciences to present programming as a practical toolbox that can quickly enable readers to write their own programs for data processing and mathematical modeling. These tools include file reading, plotting, simple text analysis, and using NumPy for numerical computations, which are fundamental building blocks of all programs in data science and computational science. At the same time, readers are introduced to the fundamental concepts of programming, including variables, functions, loops, classes, and object-oriented programming. Accordingly, the book provides a sound basis for further computer science and programming studies.

An Introduction to Self-adaptive Systems Springer Nature

The Routledge Handbook of Language and Mind Engineering is a comprehensive work that delves into the complex interplay between language, culture, politics, and media in shaping the human mind. The book is divided into five main sections, each exploring different aspects of mind engineering: I. Political Mind Engineering; II. Commercial Mind Engineering; III. Media, Culture, and Mind Engineering; IV. Linguistic and Semiotic Analysis of Mind Engineering; V. Mind Engineering in Educational Settings. The book provides a multi-dimensional perspective on how language, media, culture, and politics intersect to shape individuals' thoughts and beliefs. It highlights the diverse methods and contexts in which mind engineering occurs, making it a valuable resource for scholars, researchers, and policymakers interested in understanding the complexities of contemporary discourse and manipulation of human thought. The contents of this cutting-edge handbook will engage all undergraduate, postgraduate, PhD students and scholars, and researchers at all levels, in fields such as languages, linguistics, politics, communication studies, media studies, and psychology. Chapter 15 of this book is freely available as a downloadable Open Access PDF at <http://www.taylorfrancis.com> under a Creative Commons Attribution (CC-BY) International license. Chapter 17 of this book is freely available as a downloadable Open Access PDF at <http://www.taylorfrancis.com> under a Creative Commons Attribution-Non Commercial-No Derivatives (CC-BY-NC-ND) 4.0 license. Chapter 18 of this book is freely available as a downloadable Open Access PDF at <http://www.taylorfrancis.com> under a Creative Commons Attribution-Non Commercial-No Derivatives (CC-BY-NC-ND) 4.0 license.

The Oxford Handbook of Affective Computing John Wiley & Sons

Learning is a critical worldwide problem for humans, essential to create a peaceful and happy world. We have serious problems in learning in both wealthy and poor areas. New approaches to learning

are needed, as the current system may not rise to the new challenges. This book proposes a new strategy for learning, worldwide and for all ages of students. Computer-based distance learning would be the major delivery mechanism, with very large numbers of students. The very frequent interactions between the student and the computer would be like that with a skilled human teacher. These interactions would take place in the student's native language, in both directions. A typical interaction would be a question to a student, and a free-form student response. Both voice and keyboard student input would be possible. The learning programs would work with each student until mastery is achieved, adapting to the needs of each. Students would be active learners. The book begins with the problems and goals of learning. It considers possible forms of distance learning, looking at the variables involved, current examples of distance learning, and possible future forms including examples from science fiction. It then investigates student interactions, considering both frequency of interactions and the quality of each interaction. Programs developed in the Educational Technology Center at the University of California, Irvine, illustrate the critical idea of tutorial learning with computers. Production of tutorial learning material and costs for a student hour of learning is discussed. The book ends with suggestions for future progress. Current hardware and software is fully adequate for the tasks described. Development of all required learning units is a major activity. After this development, both better quality of learning and lower costs are very likely. Further experimental work is essential to understand the possibilities.

Smart Cities Apress

An Introduction to Statistical Learning provides an accessible overview of the field of statistical learning, an essential toolset for making sense of the vast and complex data sets that have emerged in fields ranging from biology to finance, marketing, and astrophysics in the past twenty years. This book presents some of the most important modeling and prediction techniques, along with relevant applications. Topics include linear regression, classification, resampling methods, shrinkage approaches, tree-based methods, support vector machines, clustering, deep learning, survival analysis, multiple testing, and more. Color graphics and real-world examples are used to illustrate the methods presented. This book is targeted at statisticians and non-statisticians alike, who wish to use cutting-edge statistical learning techniques to analyze their data. Four of the authors co-wrote *An Introduction to Statistical Learning, With Applications in R (ISLR)*, which has become a mainstay of undergraduate and graduate classrooms worldwide, as well as an important reference book for data scientists. One of the keys to its success was that each chapter contains a tutorial on implementing the analyses and methods presented in the R scientific computing environment. However, in recent years Python has become a popular language for data science, and there has been increasing demand for a Python-based alternative to ISLR. Hence, this book (ISLP) covers the same materials as ISLR but with labs implemented in Python. These labs will be useful both for Python novices, as well as experienced users.

The Genus Citrus Springer Nature

An Introduction to Audio Content Analysis Enables readers to understand the algorithmic analysis of

musical audio signals with AI-driven approaches An Introduction to Audio Content Analysis serves as a comprehensive guide on audio content analysis explaining how signal processing and machine learning approaches can be utilized for the extraction of musical content from audio. It gives readers the algorithmic understanding to teach a computer to interpret music signals and thus allows for the design of tools for interacting with music. The work ties together topics from audio signal processing and machine learning, showing how to use audio content analysis to pick up musical characteristics automatically. A multitude of audio content analysis tasks related to the extraction of tonal, temporal, timbral, and intensity-related characteristics of the music signal are presented. Each task is introduced from both a musical and a technical perspective, detailing the algorithmic approach as well as providing practical guidance on implementation details and evaluation. To aid in reader comprehension, each task description begins with a short introduction to the most important musical and perceptual characteristics of the covered topic, followed by a detailed algorithmic model and its evaluation, and concluded with questions and exercises. For the interested reader, updated supplemental materials are provided via an accompanying website. Written by a well-known expert in the music industry, sample topics covered in Introduction to Audio Content Analysis include: Digital audio signals and their representation, common time-frequency transforms, audio features Pitch and fundamental frequency detection, key and chord Representation of dynamics in music and intensity-related features Beat histograms, onset and tempo detection, beat histograms, and detection of structure in music, and sequence alignment Audio fingerprinting, musical genre, mood, and instrument classification An invaluable guide for newcomers to audio signal processing and industry experts alike, An Introduction to Audio Content Analysis covers a wide range of introductory topics pertaining to music information retrieval and machine listening, allowing students and researchers to quickly gain core holistic knowledge in audio analysis and dig deeper into specific aspects of the field with the help of a large amount of references.

PHARMACEUTICAL PHD THESIS WRITING AND CONDUCTING THE RESEARCH STEP-BY-STEP GUIDANCE Springer

This book offers a systematic explanation of cybersecurity protection of electricity supply facilities, including discussion of related costs, relevant standards, and recent solutions. The author explains the current state of cybersecurity in the electricity market, and cybersecurity standards that apply in that sector. He then offers a systematic approach to cybersecurity management, including new methods of cybersecurity assessment, cost evaluation and comprehensive defence. This monograph is suitable for practitioners, professionals, and researchers engaged in critical infrastructure protection.

Beginning Ubuntu Linux CRC Press

This book provides a comprehensive overview of the use of PET and SPECT in not only classic neurodegenerative disorders but also cerebrovascular disorders, brain tumors, epilepsy, head trauma, coma, sleeping disorders, and inflammatory and infectious diseases of the CNS. The new edition has been revised and updated to reflect recent advances and includes additional chapters, for example on the use of artificial intelligence and machine learning in imaging data analysis, the study of brain connectivity using PET and SPECT images, and the role of PET imaging in modulation of brain functioning by deep brain stimulation. The authors are renowned experts whose dedication

to the investigation of neurological disorders through nuclear medicine technology has achieved international recognition. Most chapters are written jointly by a clinical neurologist and a nuclear medicine specialist to ensure a multidisciplinary approach. This state of the art compendium will be invaluable for neurologists and radiologists/nuclear medicine specialists and will also be informative for interested general practitioners and geriatricians. Companion volumes on PET and SPECT in psychiatry and in neurobiological systems complete a trilogy.

Time Will Tell Springer Nature

Introduction to Machine Learning with Applications in Information Security provides a class-tested introduction to a wide variety of machine learning algorithms, reinforced through realistic applications. The book is accessible and doesn't prove theorems, or otherwise dwell on mathematical theory. The goal is to present topics at an intuitive level, with just enough detail to clarify the underlying concepts. The book covers core machine learning topics in-depth, including Hidden Markov Models, Principal Component Analysis, Support Vector Machines, and Clustering. It also includes coverage of Nearest Neighbors, Neural Networks, Boosting and AdaBoost, Random Forests, Linear Discriminant Analysis, Vector Quantization, Naive Bayes, Regression Analysis, Conditional Random Fields, and Data Analysis. Most of the examples in the book are drawn from the field of information security, with many of the machine learning applications specifically focused on malware. The applications presented are designed to demystify machine learning techniques by providing straightforward scenarios. Many of the exercises in this book require some programming, and basic computing concepts are assumed in a few of the application sections. However, anyone with a modest amount of programming experience should have no trouble with this aspect of the book. Instructor resources, including PowerPoint slides, lecture videos, and other relevant material are provided on an accompanying website: <http://www.cs.sjsu.edu/~stamp/ML/>. For the reader's benefit, the figures in the book are also available in electronic form, and in color. About the Author Mark Stamp has been a Professor of Computer Science at San Jose State University since 2002. Prior to that, he worked at the National Security Agency (NSA) for seven years, and a Silicon Valley startup company for two years. He received his Ph.D. from Texas Tech University in 1992. His love affair with machine learning began in the early 1990s, when he was working at the NSA, and continues today at SJSU, where he has supervised vast numbers of master's student projects, most of which involve a combination of information security and machine learning.

Dynamical Systems on Networks Springer

This newly expanded and updated second edition of the best-selling classic continues to take the "mystery" out of designing algorithms, and analyzing their efficacy and efficiency. Expanding on the first edition, the book now serves as the primary textbook of choice for algorithm design courses while maintaining its status as the premier practical reference guide to algorithms for programmers, researchers, and students. The reader-friendly Algorithm Design Manual provides straightforward access to combinatorial algorithms technology, stressing design over analysis. The first part, Techniques, provides accessible instruction on methods for designing and analyzing computer algorithms. The second part, Resources, is intended for browsing and reference, and comprises the catalog of algorithmic resources, implementations and an extensive bibliography. NEW to the second edition: • Doubles the tutorial material and exercises over the first edition • Provides full

online support for lecturers, and a completely updated and improved website component with lecture slides, audio and video • Contains a unique catalog identifying the 75 algorithmic problems that arise most often in practice, leading the reader down the right path to solve them • Includes several NEW "war stories" relating experiences from real-world applications • Provides up-to-date links leading to the very best algorithm implementations available in C, C++, and Java

[Control Theory Tutorial](#) Springer

Computer-Aided Design of User Interfaces IV gathers the latest research of experts, research teams and leading organisations involved in computer-aided design of user interactive applications supported by software, with specific attention for platform-independent user interfaces and context-sensitive or aware applications. This includes: innovative model-based and agent-based approaches, code-generators, model editors, task animators, translators, checkers, advice-giving systems and systems for graphical and multimodal user interfaces. It also addresses User Interface Description Languages. This books attempts to emphasize the software tool support for designing user interfaces and their underlying languages and methods, beyond traditional development environments offered by the market. It will be of interest to software development practitioners and researchers whose work involves human-computer interaction, design of user interfaces, frameworks for computer-aided design, formal and semi-formal methods, web services and multimedia systems, interactive applications, and graphical user and multi-user interfaces.

Tutorial Distance Learning Springer

This study has two central research questions: Do democracy profiles affect policy performance? And what causes democracy profiles? Oliver Schlenkrich conceptualizes and measures different democracy profiles (e.g., libertarian-majoritarian or egalitarian-majoritarian democracies) based on trade-offs between the central democracy dimensions of political freedom, political equality, and political and legal control. In addition, the study conceptually and empirically develops a typology of political performance. Regarding the first research question, the empirical analyses of about 80 democracies from 1974 to 2017 indicate that there is not an overall better performing democracy profile. Thereby, the democracy profiles do not have an immediate effect, instead their effects require a longer period of time to manifest. With respect to the second research question, the empirical findings show that several structural and cultural factors are relevant (e.g., British heritage or a competitive culture). This work is mainly based on Bayesian statistics to cope with the complexity of the data and models. About the author Oliver Schlenkrich works currently on the DFG research project 'Causes of Transformation and Democracy Profiles: Empirical Findings of the Democracy Matrix' located at the Institute of Political Science and Sociology, University of Wuerzburg, Germany. His research interests concern democracy, political culture, political participation, quality of statehood, and quantitative methods.

Origin and Performance of Democracy Profiles CRC Press

The Genus Citrus presents the enormous amount of new knowledge that has been generated in recent years on nearly all topics related to citrus. Beginning with an overview of the fundamental principles and understanding of citrus biology and behavior, the book provides a comprehensive view from Citrus evolution to current market importance. Reporting on new insights supported by the elucidation of the citrus genome sequence, it presents groundbreaking theories and fills in

previous knowledge gaps. Because citrus is among the most difficult plants to improve through traditional breeding, citrus researchers, institutions and industries must quickly learn to adapt to new developments, knowledge and technologies to address the biological constraints of a unique fruit-tree such as citrus. Despite the challenges of working with citrus, tremendous progress has been made, mostly through advances in molecular biology and genomics. This book is valuable for all those involved with researching and advancing, producing, processing, and delivering citrus products. - Includes the most current research on citrus genomic information - Provides the first detailed description of citrus origin, a new proposal for citrus taxonomy, and a redefinition of the genus Citrus - Details citrus challenges including climate change, global disease impacts, and plant improvement strategies

Basic Linear Algebra Springer Nature

Attention is a central concept in psychology. The term 'attention' itself has persisted, even though it implies a static, insulated capacity that we use when it is necessary to focus upon some relevant or stimulating event. Riess Jones presents a different way of thinking about attention; one that describes it as a continuous activity that is based on energy fluctuating in time. A majority of attention research fails to examine influence of event time structure (i.e., a speech utterance) on listeners' moment-to-moment attending. General research ignores listeners endowed with innate, as well as acquired, temporal biases. Here, attending is portrayed as a dynamic interaction of an individual within his or her surroundings. Importantly, this interaction involves synchronicity between an attender and external events. This emphasis on time and synchronicity distinguishes the author's theory, called Dynamic Attending Theory (DAT), from other approaches to attending which characterize attention metaphorically as a filter, resource pool, spotlight, and so on. Recent research from neuroscience has lent support to Riess Jones' theory, and the goal of this book is to bring this new research as well as her own to the wide audience of psychologists interested in attention more broadly.

EnvStats John Wiley & Sons

A revision of Openshaw and Abrahart's seminal work, GeoComputation, Second Edition retains influences of its originators while also providing updated, state-of-the-art information on changes in the computational environment. In keeping with the field's development, this new edition takes a broader view and provides comprehensive coverage across the

Cyber-Vigilance and Digital Trust Pristyn Research Solutions

Affective components are as important as cognitive components in tutoring assisted learning process. Feedback from tutors is essential in keeping students motivated. Affectivity and motivation are also significant in computer-based tutoring systems. However, several educational frameworks do not include this kind of interaction between students and tutoring systems. In those cases, the students learning interest and motivation to learn could be negatively affected, and student profits from the system could be impoverished. This is why tutoring systems need to provide direct and affective interaction with students; it can encourage them and increase the motivation to learn. This book introduces a broad range of topics in affective learning in computer-based systems. The text offers a deep conceptual background, covering relevant concepts of affectivity, feedback and motivational components in learning environments. It describes the design of a proposed model for

providing affective feedback, the mathematical validation of the conceptual model and its implementation. Moreover, it presents an analysis of the impact of the affective feedback on student motivation to learn. Finally, the book offers research perspectives of the impact and applicability of the affective feedback in computer-based tutoring environments. Affective Feedback in Intelligent Tutoring Systems can be used by human tutors who want to include motivational and affective elements in the learning process, researchers in Human-Computer Interaction and Education and by software developers who want to develop learning systems using these elements.

Methods for Analysing and Reporting EQ-5D Data Springer Science & Business Media

This book is a practical guide in understanding how to prevent HIV transmission, to recognize risk behaviors, and to add something else to their repertoires. It aims to empower clinicians and provide a sense of security and competence with the recognition and understanding of some of the psychiatric illnesses that complicate and perpetuate the HIV pandemic that continue to persist throughout every area of the world despite the magnitude of the progress that has transformed the illness from a rapidly fatal to chronic illness that is no longer life-limiting. Missing in most of the literature on HIV is the subtle, and sometimes not so subtle, contribution of psychiatric symptoms, psychiatric illness, and risk behaviors that drive the pandemic and serve as catalysts for new infections. This practical guide provides state-of-the-art understanding of not only prevention but also a way to recognize risk behaviors, psychiatric symptoms, and psychiatric illnesses that will demystify and decode the sometimes enigmatic and frustrating reasons for nonadherence with diagnostic procedures and life-saving treatments and care. All behaviors and pathology are covered as well as the resources and treatments available. The goal of this text is to refresh knowledge on the current state of psychiatric illness management among people living with HIV, to provide a concise volume on the psychiatric aspects of HIV prevention and treatment that substantially impact the overall care of the patient, and to help understand the psychiatric catalysts of the pandemic. Written by experts in the field, *HIV Psychiatry: A Practical Guide for Clinicians* provides enduring guidance to medical and other professionals caring for complicated clinical patients as they face ongoing challenges in working with persons with HIV and AIDS.

How to Perform a Systematic Literature Review CRC Press

Ubuntu Linux is the fastest growing Linux-based operating system, and *Beginning Ubuntu Linux, Fifth Edition* teaches all of us—including those who have never used Linux—how to use it productively, whether you come from Windows or the Mac or the world of open source. *Beginning Ubuntu Linux, Fifth Edition* shows you how to take advantage of Lucid Lynx. Based on the best-selling previous edition, Emilio Raggi maintains a fine balance between teaching Ubuntu and introducing new features. Whether you aim to use it in the home or in the office, you'll be introduced to the world of Ubuntu Linux, from simple word processing to using cloud services. You'll learn how to control the Ubuntu system, which you just installed from the book's DVD, as you are guided through common tasks such as configuring the system's graphical user interface (GUI), listening to audio CDs and MP3s, producing documents, using VoIP and chat, and of course, general system maintenance. This book also supplies a series of comprehensive tutorials on Ubuntu administration and security—essential for any Ubuntu user—while not neglecting matters pertaining to office applications and the cloud.

Introduction to Machine Learning with Applications in Information Security Springer Science & Business Media

Basic Linear Algebra is a text for first year students leading from concrete examples to abstract theorems, via tutorial-type exercises. More exercises (of the kind a student may expect in examination papers) are grouped at the end of each section. The book covers the most important basics of any first course on linear algebra, explaining the algebra of matrices with applications to analytic geometry, systems of linear equations, difference equations and complex numbers. Linear equations are treated via Hermite normal forms which provides a successful and concrete explanation of the notion of linear independence. Another important highlight is the connection between linear mappings and matrices leading to the change of basis theorem which opens the door to the notion of similarity. This new and revised edition features additional exercises and coverage of Cramer's rule (omitted from the first edition). However, it is the new, extra chapter on computer assistance that will be of particular interest to readers: this will take the form of a tutorial on the use of the "LinearAlgebra" package in MAPLE 7 and will deal with all the aspects of linear algebra developed within the book.

A Practical Guide to TPM 2.0 Oxford Library of Psychology

This book covers all aspects of operational modal analysis for civil engineering, from theoretical background to applications, including measurement hardware, software development, and data processing. In particular, this book provides an extensive description and discussion of OMA methods, their classification and relationship, and advantages and drawbacks. The authors cover both the well-established theoretical background of OMA methods and the most recent developments in the field, providing detailed examples to help the reader better understand the concepts and potentialities of the technique. Additional material is provided (data, software) to help practitioners and students become familiar with OMA. Covering a range of different aspects of OMA, always with the application in mind, the practical perspective adopted in this book makes it ideal for a wide range of readers from researchers to field engineers; graduate and undergraduate students; and technicians interested in structural dynamics, system identification, and Structural Health Monitoring. This book also: Analyzes OMA methods extensively, providing details on implementation not easily found in the literature Offers tutorial for development of customized measurement and data processing systems for LabView and National Instruments programmable hardware Discusses different solutions for automated OMA Contains many explanatory applications on real structures Provides detail on applications of OMA beyond system identification, such as (vibration based monitoring, tensile load estimation, etc.) Includes both theory and applications

Computer-Aided Design of User Interfaces IV New York : Springer-Verlag

The topics covered in this book range from modeling and programming languages and environments, via approaches for design and verification, to issues of ethics and regulation. In terms of techniques, there are results on model-based engineering, product lines, mission specification, component-based development, simulation, testing, and proof. Applications range from manufacturing to service robots, to autonomous vehicles, and even robots that evolve in the real world. A final chapter summarizes issues on ethics and regulation based on discussions from a panel of experts. The origin of this book is a two-day event, entitled RoboSoft, that took place in November

2019, in London. Organized with the generous support of the Royal Academy of Engineering and the University of York, UK, RoboSoft brought together more than 100 scientists, engineers and practitioners from all over the world, representing 70 international institutions. The intended readership includes researchers and practitioners with all levels of experience interested in working in the area of robotics, and software engineering more generally. The chapters are all self-contained,

include explanations of the core concepts, and finish with a discussion of directions for further work. Chapters 'Towards Autonomous Robot Evolution', 'Composition, Separation of Roles and Model-Driven Approaches as Enabler of a Robotics Software Ecosystem' and 'Verifiable Autonomy and Responsible Robotics' are available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.