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Making Media: Foundations of Sound and Image Production takes the media production process and deconstructs it into its most basic components. Students will learn the basic concepts of media production – frame, sound, light, time, motion, and sequencing – and be able to apply them to any medium they choose, from film and television to fine art and online applications. They will also become well-grounded in the digital work environment and the tools required to produce media in today's digital environment. This new fourth edition is completely updated and includes a new chapter on the production process and production safety; information on current trends in production, exhibition, and distribution; and much more. New topics include virtual and augmented reality, the use of drones and new practices interactive media. The text is also fully illustrated and includes sidebar discussions of pertinent issues throughout. The companion website has been completely revamped with interactive exercises for each chapter, allowing students to explore the process of media production. This is the digital version of the printed book (Copyright © 2004). The LaTeX Companion has long been the essential resource for anyone using LaTeX to create high-quality printed documents. This completely updated edition brings you all the latest information about LaTeX and the vast range of add-on packages now available--over 200 are covered! Full of new tips and tricks for using LaTeX in both traditional and modern typesetting, this book will also show you how to customize layout features to your own needs--from phrases and paragraphs to headings, lists, and pages. Inside, you will find: Expert advice on using LaTeX's basic formatting tools to create all types of publications--from memos to encyclopedias In-depth coverage of important extension packages for tabular and technical typesetting, floats and captions, multicolumn layouts--including reference guides and discussions of the underlying typographic and TeXnical concepts Detailed techniques for generating and typesetting contents lists, bibliographies, indexes, etc. Tips and tricks for LaTeX programmers and systems support New to this edition: Nearly 1,000 fully tested examples that illustrate the text and solve typographical and technical problems--all ready to run! An additional chapter on citations and bibliographies Expanded material on the setup and use of fonts to access a huge collection of glyphs, and to typeset text from a wide range of languages and cultures Major new packages for graphics, "verbatim" listings, floats, and page layout Full coverage of the latest packages for all types of documents--mathematical, multilingual, and many more Detailed help on all error messages, including those troublesome low-level TeX errors Like its predecessor, The LaTeX Companion, Second Edition, is an indispensable reference for anyone wishing to productively use LaTeX. Appendix D talks about the TLC2 TeX CD at the end of the book, something you will have a hard time finding in the eBook. The most important content of the CD included with the print book is the full text of the examples. You can find the examples easily on t

Internet, for example at <http://www.ctan.org/tex-archive/info/examples/tlc2> as well as in many LaTeX installations. Welches Paket, welcher Befehl, welche Syntax? Mit LATEX lassen sich Präsentationen von hoher Qualität erzeugen. Zusätzlich kann das Satzsystem TEX benutzt werden, um auf einfache Weise animierte Folien zu erstellen. Dieses Buch zeigt, wie man Präsentationen mit den beiden wichtigsten Klassen powerdot und beamer erstellt. Anhand von Beispielen wird zudem gezeigt, wie man ein eigenes Corporate Design umsetzen kann, um eine eigene Dokumentenklasse oder ein eigenes Paket zu erstellen. Fully describes optimization methods that are currently most valuable in solving real-life problems. Since optimization has applications in almost every branch of science and technology, the text emphasizes their practical aspects in conjunction with the heuristics useful in making them perform more reliably and efficiently. To this end, it presents comparative numerical studies to give readers a feel for possible applications and to illustrate the problems in assessing evidence. Also provides theoretical background which provides insights into how methods are derived. This edition offers revised coverage of basic theory and standard techniques, with updated discussion of line search methods, Newton and quasi-Newton methods, and conjugate direction methods, as well as a comprehensive treatment of restricted step or trust region methods not commonly found in the literature. Also includes recent developments in hybrid methods for nonlinear least squares; an extended discussion of linear programming, with new methods for stable updating of LU factors; and a completely new section on network programming. Chapters include computer subroutines, worked examples, and study questions. This volume contains the papers that were accepted for presentation at the International Conference on T X, XML, and Digital Typography, jointly held with the 25th Annual Meeting of the T X Users Group in Xanthi, Greece in the summer of 2004. The term "Digital Typography" refers to the preparation of printed matter using only electronic computers and electronic printing devices, such as laser-jet printers. The document preparation process involves mainly the use of a digital typesetting system as well as data representation technologies. T X and E its offspring are beyond doubt the most successful current digital typesetters, while XML is the standard for text-based data representation for both business and scientific activities. All papers appearing in this volume were fully refereed by the members of the program committee. The papers were carefully selected to reflect the research work that is being done in the field of digital typography using T X and/or its E offspring. The problems for which comprehensive solutions have been proposed include proper multilingual document preparation and XML document processing and generation. The proposed solutions deal not simply with typesetting issues, but also related issues in document preparation, such as the manipulation of complex bibliographic databases, and automatic conversion of text expressed in one grammatical system to a more recent one (as for the Greek language, converting between monotonic Greek and polytonic Greek). The conference is being graciously hosted by the Democritus University of Thrace in Xanthi and by the Greek T X Friends. We wish to thank Basil K The visual world of animals is highly diverse and often very different from that of humans. This book provides an extensive review of the latest behavioral and neurobiological research on animal vision, detailing fascinating species similarities and differences in visual processing. Lucid is a new dataflow language, designed to exploit the capabilities of the multi-processor machines which are more powerful than single-processor machines, and require a language in which highly parallel algorithms can be easily expressed. The primary objective of this book is to prove that dataflow is a real alternative to sequential/imperative computing and that dataflow algorithms can be expressed naturally and concisely in Lucid. The idea of one's memory "filling up" is a humorous misconception of how memory in general is thought to work; actually has no capacity limit. However, the idea of a "full brain" makes more sense with reference to working memory, which is the limited amount of information a person can hold temporarily in an especially accessible form for use in the completion of almost any challenging cognitive task. This groundbreaking book explains the evidence supporting Cowan's theoretical proposal about working memory capacity, and compares it to competing perspectives. Cognitive psychologists profoundly disagree on how working memory is limited: whether by the number of units that can be retained (and so, what kind of units and how many), the types of interfering material, the time that has elapsed, so

combination of these mechanisms, or none of them. The book assesses these hypotheses and examines explanations of why capacity limits occur, including vivid biological, cognitive, and evolutionary accounts. The book concludes with a discussion of the practical importance of capacity limits in daily life. This 10th anniversary Classic Edition will continue to be accessible to a wide range of readers and serve as an invaluable reference for all memory researchers. Since its publication in 1985, the "MLA Style Manual" has been the standard guide for graduate students, teachers, and scholars in the humanities and for professional writers in many fields. Extensively reorganized and revised, the new edition contains several added sections and updated guidelines on citing electronic works--including materials found on the World Wide Web.

bookdown: Authoring Books and Technical Documents with R Markdown presents a much easier way to write books and technical publications than traditional tools such as LaTeX and Word. The bookdown package inherits the simplicity of syntax and flexibility for data analysis from R Markdown, and extends R Markdown for technical writing, so that you can make better use of document elements such as figures, tables, equations, theorems, citations, and references. Similar to LaTeX, you can number and cross-reference these elements with bookdown. Your document can even include live examples so readers can interact with them while reading the book. The book can be rendered to multiple output formats, including LaTeX/PDF, HTML, EPUB, and Word, thus making it easy to put your documents online. The style and theme of these output formats can be customized. We used books and R primarily for examples in this book, but bookdown is not only for books or R. Most features introduced in this book also apply to other types of publications: journal papers, reports, dissertations, course handouts, study notes, and even novels. You do not have to use R, either. Other choices of computing languages include Python, C, C++, SQL, Bash, Stan, JavaScript, and so on, although R is best supported. You can also leave out computing, for example, to write a fiction. This book itself is an example of publishing with bookdown and R Markdown, and its source is fully available on GitHub.

A broad introduction to algorithms for decision making under uncertainty, introducing the underlying mathematical problem formulations and the algorithms for solving them. Automated decision-making systems or decision-support systems—used in applications that range from aircraft collision avoidance to breast cancer screening—must be designed to account for various sources of uncertainty while carefully balancing multiple objectives. This textbook provides a broad introduction to algorithms for decision making under uncertainty, covering the underlying mathematical problem formulations and the algorithms for solving them. The book first addresses the problem of reasoning about uncertainty and objectives in simple decisions at a single point in time, and then turns to sequential decision problems in stochastic environments where the outcomes of our actions are uncertain. It goes on to address model uncertainty, when we do not start with a known model and must learn how to act through interaction with the environment; state uncertainty, in which we do not know the current state of the environment due to imperfect perceptual information; and decision contexts involving multiple agents. The book focuses primarily on planning and reinforcement learning, although some of the techniques presented draw on elements of supervised learning and optimization. Algorithms are implemented in the Julia programming language. Figures, examples, and exercises convey the intuition behind the various approaches presented. An expanded and updated edition of a comprehensive presentation of the theory and practice of model checking, a technology that automates the analysis of complex systems. Model checking is a verification technology that provides an algorithmic means of determining whether an abstract model—representing, for example, a hardware or software design—satisfies a formal specification expressed as a temporal logic formula. If the specification is not satisfied, the method identifies a counterexample execution that shows the source of the problem. Today, many major hardware and software companies use model checking in practice, for the verification of VLSI circuits, communication protocols, software device drivers, real-time embedded systems, and security algorithms. This book offers a comprehensive presentation of the theory and practice of model checking, covering the foundations of the key algorithms in depth. The field of model checking has grown dramatically since the publication of the first edition in 1999, and this second edition reflects the advances in the field. Reorganized, expanded, and updated, the new edition retains

the focus on the foundations of temporal logic model while offering new chapters that cover topics that did not exist in 1999: propositional satisfiability, SAT-based model checking, counterexample-guided abstraction refinement, and software model checking. The book serves as an introduction to the field suitable for classroom use and as an essential guide for researchers. LyX ist ein Textverarbeitungswerkzeug, das die Vorteile von TeX mit denen einer grafischen Benutzeroberfläche kombiniert. Es wird immer häufiger für akademische Arbeiten sowie Bücher beliebigen Umfangs benutzt. Es unterstützt viele Ausgabeformate wie PDF, PostScript, DVI, HTML und OpenDocument. LyX ist eine OpenSource Software und läuft unter Linux/Unix, Windows und Mac OS X. Das Buch erklärt wie LyX und notwendige Programme zur Verwendung eingerichtet werden. Es erläutert die Funktionen zum Erstellen von wissenschaftlichen Arbeiten und liefert Informationen zur Installation.

Examinations of civic engagement in digital culture—the technologies, designs, and practices that support connection through common purpose in civic, political, and social life. Countless people around the world harness the affordances of digital media to enable democratic participation, coordinate disaster relief, campaign for policy change, and strengthen local advocacy groups. The world watched as activists used social media to organize protests during the Arab Spring, Occupy Wall Street, and Hong Kong's Umbrella Revolution. Many governmental and community organizations changed their mission and function as they adopted new digital tools and practices. This book examines the use of "civic media"—the technologies, designs, and practices that support connection through common purpose in civic, political, and social life. Scholars from a range of disciplines and practitioners from a variety of organizations offer analyses and case studies that explore the theory and practice of civic media. The contributors set out the conceptual context for the intersection of civic and media; examine the pressure to innovate and the sustainability of innovation; explore play as a template for resistance; look at civic education; discuss media-enabled activism in communities; and consider methods and funding for civic media research. The case studies that round out each section range from a "debt resistance" movement to government service delivery ratings to the "It Gets Better" campaign aimed at combating suicide among lesbian, gay, bisexual, transgender, and queer youth. The book offers a valuable interdisciplinary dialogue on the challenges and opportunities of the increasingly influential space of civic media. The rise and fall of the Islamic scientific tradition, and the relationship of Islamic science to European science during the Renaissance. The Islamic scientific tradition has been described many times in accounts of Islamic civilization and general histories of science, with most authors tracing its beginnings to the appropriation of ideas from other ancient civilizations—the Greek in particular. In this thought-provoking and original book, George Saliba argues that, contrary to the generally accepted view, the foundations of Islamic scientific thought were laid well before Greek sources were formally translated into Arabic in the ninth century. Drawing on an account by the tenth century intellectual historian Ibn al-Nadim that is ignored by most modern scholars, Saliba suggests that early translations from mainly Persian and Greek sources outlining elementary scientific ideas for the use of government departments were the impetus for the development of the Islamic scientific tradition. He argues further that there was an organic relationship between the Islamic scientific thought that developed in the later centuries and the science that came into being in Europe during the Renaissance. Saliba outlines the conventional accounts of Islamic science, then discusses their shortcomings and proposes an alternate narrative. Using astronomy as a template for tracing the progress of science in Islamic civilization, Saliba demonstrates the originality of Islamic scientific thought. He details the innovations (including new mathematical tools) made by the Islamic astronomers from the thirteenth to sixteenth centuries, and offers evidence that Copernicus could have known of and drawn on their work. Rather than viewing the rise and fall of Islamic science from the often-narrated perspectives of politics and religion, Saliba focuses on the scientific production itself and the complex social, economic, and intellectual conditions that made it possible. LaTeX is the premiere software of choice for writers who need to prepare technical information in a clear and elegant manner. This unique book tells how to use LaTeX or TeX with files prepared with everyday office software such as Lotus or Wordperfect and how to set up software links with Acrobat and hyper-text using LaTeX files.

Internet communication. Illustrated. A comprehensive and self-contained introduction to Gaussian processes, which provide a principled, practical, probabilistic approach to learning in kernel machines. Gaussian processes (GPs) provide a principled, practical, probabilistic approach to learning in kernel machines. GPs have received increased attention in the machine-learning community over the past decade, and this book provides a long-needed systematic and unified treatment of theoretical and practical aspects of GPs in machine learning. The treatment is comprehensive and self-contained, targeted at researchers and students in machine learning and applied statistics. The book deals with the supervised-learning problem for both regression and classification, and includes detailed algorithms. A wide variety of covariance (kernel) functions are presented and their properties discussed. Model selection is discussed both from a Bayesian and a classical perspective. Many connections to other well-known techniques from machine learning and statistics are discussed, including support-vector machines, neural networks, splines, regularization networks, relevance vector machines and others. Theoretical issues including learning curves and the PAC-Bayesian framework are treated, and several approximation methods for learning with large datasets are discussed. The book contains illustrative examples and exercises, and code and datasets are available on the Web. Appendixes provide mathematical background and a discussion of Gaussian Markov processes.

Unique in its coverage of all aspects of modern particle physics, this textbook provides a clear connection between the theory and recent experimental results, including the discovery of the Higgs boson at CERN. It provides a comprehensive and self-contained description of the Standard Model of particle physics suitable for upper-level undergraduate students and graduate students studying experimental particle physics. Physical theory is introduced in a straightforward manner with full mathematical derivations throughout. Fully-worked examples enable students to link the mathematical theory to results from modern particle physics experiments. End-of-chapter exercises, graded by difficulty, provide students with a deeper understanding of the subject. Online resources available at www.cambridge.org/MPP feature password-protected fully-worked solutions to problems for instructors, numerical solutions and hints to the problems for students and PowerPoint slides and JPEGs of figures from the book.

Vehicular Ad-Hoc Networks (VANETs) play a key role to develop Intelligent Transportation Systems (ITS) aiming to achieve road safety and to guaranty needs of drivers and passengers, in addition to improve the transportation productivity. One of the most important challenges of this kind of networks is the data routing between VANET nodes which should be routed with high level of Quality of Service (QoS) to ensure receiving messages in the time. Then, the driver can take the appropriate decision to improve the road safety. In the literature, there are several routing protocols for VANETs which are more or less reliable to reach safety requirements. In this book, we start by describing all VANET basic concepts such as VANET definition, VANET versus Mobile ad-Hoc Network (MANET), architectures, routing definition and steps, Quality of Service (QoS) for VANET Routing, Metrics of evaluation, Experimentation, and simulation of VANETs, mobility patterns of VANET etc. Moreover, different routing protocols for routing in VANETs will be described. We propose two main categories to be presented: classical routing and bio-inspired routing. Concerning classical VANET, main principles and all phases will be overviewed, as well as, their two sub-categories which are topological and geographical protocols. After that, we propose a new category called bio-inspired routing which is inspired by natural phenomenon such as Ant colony, Bee life, Genetic operators etc. We present also, some referential protocols as example of each category. In this book, we focus on the idea of how to apply bio-inspired principle into VANET routing to improve road safety, and to ensure QoS of vehicular applications. The idea of technological singularity, and what it would mean if ordinary human intelligence were enhanced or overtaken by artificial intelligence. The idea that human history is approaching a "singularity"—that ordinary humans will someday be overtaken by artificially intelligent machines or cognitively enhanced biological intelligence, or both—has moved from the realm of science fiction to serious debate. Some singularity theorists predict that if the field of artificial intelligence (AI) continues to develop at its current dizzying rate, the singularity could come about in the middle of the present century. Murray Shanahan offers an introduction to the idea of the singularity and considers

ramifications of such a potentially seismic event. Shanahan's aim is not to make predictions but rather to investigate a range of scenarios. Whether we believe that singularity is near or far, likely or impossible, apocalypse or utopia, the very idea raises crucial philosophical and pragmatic questions, forcing us to think seriously about what we want as a species. Shanahan describes technological advances in AI, both biologically inspired and engineered from scratch. Once human-level AI—theoretically possible, but difficult to accomplish—has been achieved, he explains, the transition to superintelligent AI could be very rapid. Shanahan considers what the existence of superintelligent machines could mean for such matters as personhood, responsibility, rights, and identity. Some superhuman AI agents might be created to benefit humankind; some might go rogue. (Is Siri the template, or HAL?) The singularity presents both an existential threat to humanity and an existential opportunity for humanity to transcend its limitations. Shanahan makes it clear that we need to imagine both possibilities if we want to bring about the better outcome. Using sentence comprehension as a case study for all of cognitive science, David Townsend and Thomas Bever offer an integration of two major approaches, the symbolic-computational and the associative-connectionist. The symbolic-computational approach emphasizes the formal manipulation of symbols that underlies creative aspects of language behavior. The associative-connectionist approach captures the intuition that most behaviors consist of accumulated habits. The authors argue that the sentence is the natural level at which associative and symbolic information merge during comprehension. The authors develop and support an analysis-by-synthesis model that integrates associative and symbolic information in sentence comprehension. This integration resolves problems each approach faces when considered independently. The authors review classic and contemporary symbolic and associative theories of sentence comprehension, and show how recent developments in syntactic theory fit well with the integrated analysis-by-synthesis model. They offer analytic, experimental, and neurological evidence for their model and discuss its implications for broader issues in cognitive science, including the logical necessity of an integration of symbolic and connectionist approaches in the field. The fabrication of an integrated circuit requires a variety of physical and chemical processes to be performed on a semiconductor substrate. In general, these processes fall into three categories: film deposition, patterning, and semiconductor doping. Films of both conductors and insulators are used to connect and isolate transistors and their components. By creating structures of these various components millions of transistors can be built and wired together to form the complex circuitry of modern microelectronic devices. Fundamental to all of these processes is lithography, ie, the formation of three-dimensional relief images on the substrate for subsequent transfer of the pattern to the substrate. This book presents a complete theoretical and practical treatment of the topic of lithography for both students and researchers. It comprises ten detailed chapters plus three appendices with problems provided at the end of each chapter. Additional Information: Visiting <http://www.lithoguru.com/textbook/index.html> enhances the reader's understanding as the website supplies information on how you can download a free laboratory manual, Optical Lithography Modelling with MATLAB®, to accompany the textbook. You can also contact the author and find help for instructors. Mathematics of Computing -- Numerical Analysis. An essential guide for teaching and learning computational art and design: exercises, assignments, interviews, and more than 170 illustrations of creative work. This book is an essential resource for art educators and practitioners who want to explore code as a creative medium, and serves as a guide for computer scientists transitioning from STEM to STEAM in their syllabi or practice. It provides a collection of classic creative coding prompts and assignments, accompanied by annotated examples of both classic and contemporary projects, and more than 170 illustrations of creative work and features a set of interviews with leading educators. Picking up where standard programming guides leave off, the authors highlight alternative programming pedagogies suitable for the art- and design-oriented classroom, including teaching approaches, resources, and community support structures. Continuing his exploration of the organization of complexity and the science of design, this new edition of Herbert Simon's classic work on artificial intelligence adds a chapter that sorts out the current theories and tools—chaos, adaptive systems, genetic algorithms—for analyzing complexity and complex systems.

There are updates throughout the book as well. These take into account important advances in cognitive psychology and the science of design while confirming and extending the book's basic thesis that a physical symbol system has the necessary and sufficient means for intelligent action. The chapter "Economic Reality" has also been revised to reflect a change in emphasis in Simon's thinking about the respective roles of organizations and markets in economic systems. Investigations of affective experiences that emerge in online settings that range from Facebook discussion forums to "smart" classrooms. Our encounters with websites, avatars, videos, mobile apps, discussion forums, GIFs, and nonhuman intelligent agents allow us to experience sensations of connectivity, interest, desire, and attachment—as well as detachment, boredom, fear, and shame. Some affective online encounters may arouse complex, contradictory feelings that resist dualistic distinctions. In this book, leading scholars examine the fluctuating and altering dynamics of affect that give shape to online connections and disconnections. Doing so, they tie issues of circulation and connectivity to theorizations of networked affect. Their diverse investigations—considering subjects that range from online sexual dynamics to the liveliness of computer code—demonstrate the value of affect theories for Internet studies. The contributors investigate networked affect in terms of intensity, sensation, and value. They explore online intensities that range from Tumblr practices in LGBTQ communities to visceral reactions to animated avatars; examine the affective materiality of software in such platforms as steampunk culture and nonprofit altporn; and analyze the ascription of value to online activities including the GTD ("getting things done") movement and the accumulation of personal digital materials. Contributors James Ash, Alex Cho, Jodi Dean, Melissa Gregg, Ken Hillis, Kylie Jarrett, Tero Karppi, Stephen Maddison, Susanna Paasonen, Jussi Parikka, Michael Petit, Jennifer Pybus, Jenny Sundén, Veronika Tzankova

Praxisorientiert und ohne erhobenen Zeigefinger behandelt der Leitfaden alle wichtigen Themen rund um die wissenschaftliche Ausarbeitung: von der Recherche über die Verwaltung der Quellen, Rechtschreibung, Stil und Gliederung bis hin zur korrekten Zitierweise, Fragen des Urheberrechts, Formeln und Grafiken sowie dem Umgang mit Verlag und Druckerei. Eine Vorlage auf Basis des Textverarbeitungsprogramms LaTeX ist online frei erhältlich. Sie bietet eine solide Basis für eine wissenschaftliche Arbeit im Rahmen des Studiums oder für eine Dissertation. Mit LaTeX lassen sich Dokumente in höchster Qualität erstellen, die den Vergleich mit professionell hergestellten Dokumenten nicht scheuen müssen. Von einfachen Briefen bis hin zu dem, was Sie gerade in der Hand halten, ist die Anwendung von LaTeX eine große Hilfe. Die angebliche Hürde, die Einsteiger bei der ersten Benutzung von LaTeX empfinden, wird mit diesem Buch beseitigt. Man findet ebenso eine Anleitung zur Auswahl, Installation und Verwendung gut geeigneter Editoren unter den Betriebssystemen Windows, Linux und Mac OS X, wie Installationshinweise für TeXLive oder MiKTeX. Behandelt werden die Programme pdfLaTeX, XeLaTeX, LuaLaTeX und dvips. Dieses Buch, welches sich sowohl an Naturwissenschaftler als auch Geisteswissenschaftler wendet, zeigt an vielen Beispielen, wie man seine Dokumente anspruchsvoll gestalten kann. A clear and complete guide to bibliographic and footnoting style for citing on-line information fills a desperate need for coherent rules for these citations as well as gives guidelines for formatting documents for online preparation, and much more.

Simultaneous. UP. An introduction to a broad range of topics in deep learning, covering mathematical and conceptual background, deep learning techniques used in industry, and research perspectives. "Written by three experts in the field, Deep Learning is the only comprehensive book on the subject." —Elon Musk, cochair of OpenAI; cofounder and CEO of Tesla and SpaceX Deep learning is a form of machine learning that enables computers to learn from experience and understand the world in terms of a hierarchy of concepts. Because the computer gathers knowledge from experience, there is no need for a human computer operator to formally specify all the knowledge that the computer needs. The hierarchy of concepts allows the computer to learn complicated concepts by building them out of simpler ones; a graph of these hierarchies would be many layers deep. This book introduces a broad range of topics in deep learning. The text offers mathematical and conceptual background, covering relevant concepts in linear algebra, probability theory and information theory, numerical computation, and machine learning. It describes deep learning techniques used by practitioners in industry, including

deep feedforward networks, regularization, optimization algorithms, convolutional networks, sequence modeling, and practical methodology; and it surveys such applications as natural language processing, speech recognition, computer vision, online recommendation systems, bioinformatics, and videogames. Finally, the book offers research perspectives, covering such theoretical topics as linear factor models, autoencoders, representation learning, structured probabilistic models, Monte Carlo methods, the partition function, approximate inference, and deep generative models. Deep Learning can be used by undergraduate or graduate students planning careers in either industry or research, and by software engineers who want to begin using deep learning in their products or platforms. A website offers supplementary material for both readers and instructors.

R Markdown is a powerful tool for combining analysis and reporting into the single document in the spirit of literate programming and reproducible research. Since the birth of the rmarkdown package in early 2014, R Markdown has grown substantially from a package that supports a few output formats (such as HTML, PDF, and Word) to an extensive and diverse ecosystem that enables the creation of books, blogs, scientific articles, websites, and more. Due to its rapid success, this ecosystem is hard to learn completely meaning that R Markdown users, from novices to advanced users, likely do not know all that these packages have to offer. The R Markdown Cookbook confronts this gap by showcasing short, practical examples of wide-ranging tips and tricks to get the most out of these tools. After reading this book, you will learn how to: Enhance your R Markdown content with diagrams, citations, and dynamically generated text Streamline your workflow with child documents, code chunk references, and caching Control the formatting and layout with Pandoc markdown syntax or by writing custom HTML and LaTeX templates Utilize chunk options and hooks to fine-tune how your code is processed Switch between different language engines to seamlessly incorporate python, D3, and more into your analysis Published Nov 25, 2013 by Addison-Wesley Professional. Part of the Tools and Techniques for Computer Typesetting series. The series editor may be contacted at frank.mittelbach@latex-project.org.

LaTeX is the text-preparation system of choice for scientists and academics, and is especially useful for typesetting technical materials. This popular book shows you how to begin using LaTeX to create high-quality documents. The book also serves as a handy reference for all LaTeX users. In this completely revised edition, the authors cover the LaTeX2_ε standard and offer more details, examples, exercises, tips, and tricks. They go beyond the core installation to describe the key contributed packages that have become essential to LaTeX processing. Inside, you will find: Complete coverage of LaTeX fundamentals, including how to input text, symbols, and mathematics; how to produce lists and tables; how to include graphics and color; and how to organize and customize documents Discussion of more advanced concepts such as bibliographical databases and BibTeX, math extensions with AMS-LaTeX, drawing, slides, and letters Helpful appendices on installation, error messages, creating packages, using LaTeX with HTML and XML, and fonts An extensive alphabetized listing of commands and their uses New to this edition: More emphasis on LaTeX as a markup language that separates content and form--consistent with the essence of XML Detailed discussions of contributed packages alongside relevant standard topics In-depth information on PDF output, including extensive coverage of how to use the hyperref package to create links, bookmarks, and active buttons As did the three best-selling editions that preceded it, Guide to LaTeX, Fourth Edition, will prove indispensable to anyone wishing to gain the benefits of LaTeX. The accompanying CD-ROM is part of the TeX Live set distributed by TeX Users Groups, containing a full LaTeX installation for Windows, MacOSX, and Linux, as well as many extensions, including those discussed in the book. 0321173856B10162003

You can use this book to design a house for yourself with your family; you can use it to work with your neighbors to improve your town neighborhood; you can use it to design an office, or a workshop, or a public building. And you can use it to guide you in the actual process of construction. After a ten-year silence, Christopher Alexander and his colleagues at the Center for Environmental Structure are now publishing a major statement in the form of three books which will, in their words, "lay the basis for an entirely new approach to architecture, building and planning, which will we hope replace existing ideas and practices entirely." The three books are The Timeless Way of Building, The Oregon Experiment, and this book, A Pattern

Language. At the core of these books is the idea that people should design for themselves their own houses, streets, and communities. This idea may be radical (it implies a radical transformation of the architectural profession) but it comes simply from the observation that most of the wonderful places the world were not made by architects but by the people. At the core of the books, too, is the point in designing their environments people always rely on certain "languages," which, like the languages we speak, allow them to articulate and communicate an infinite variety of designs within a formal system which gives them coherence. This book provides a language of this kind. It will enable a person to make a design for almost any kind of building, or any part of the built environment. "Patterns," the units of this language, are answers to design problems (How high should a window sill be? How many stories should a building have? How much space in a neighborhood should be devoted to grass and trees?). More than 250 of the patterns in this pattern language are given: each consists of a problem statement, a discussion of the problem with an illustration, and a solution. As the authors say in their introduction many of the patterns are archetypal, so deeply rooted in the nature of things that it seems likely that they will be a part of human nature, and human action, as much in five hundred years as they are today.

R Markdown: The Definitive Guide is the first official book authored by the core R Markdown developers that provides a comprehensive and accurate reference to the R Markdown ecosystem. With R Markdown, you can easily create reproducible data analysis reports, presentations, dashboards, interactive applications, books, dissertations, websites, and journal articles, while enjoying the simplicity of Markdown and the great power of R and other languages. In this book, you will learn

- Basics: Syntax of Markdown and R code chunks, how to generate figures and tables, and how to use other computing languages
- Built-in output formats of R Markdown: PDF/HTML/Word/RTF/Markdown documents and ioslides/Slidy/Beamer/PowerPoint presentations
- Extensions and applications: Dashboards, Tufte handouts, xaringan/reveal.js presentations, websites, books, journal articles, and interactive tutorials
- Advanced topics: Parameterized reports, HTML widgets, document templates, custom output formats, and Shiny documents.

Yihui Xie is a software engineer at RStudio. He has authored and co-authored several R packages, including knitr, rmarkdown, bookdown, blogdown, shiny, xaringan, and animation. He has published three other books, *Dynamic Documents with R and knitr*, *bookdown: Authoring Books and Technical Documents with R Markdown*, and *blogdown: Creating Websites with R Markdown*.

J.J. Allaire is the founder of RStudio and the creator of the RStudio IDE. He is an author of several packages in the R Markdown ecosystem including rmarkdown, flexdashboard, learnr, and radix.

Garrett Grolemund is the co-author of *R for Data Science* and author of *Hands-On Programming with R*. He wrote the lubridate R package and works for RStudio as an advocate who trains engineers to do data science with R and the Tidyverse.

Take the strategic and systematic approach to analyze data to solve business problems

- Key Features
- Gain detailed information about the theory of data science
- Augment your coding knowledge with practical data science techniques for efficient data analysis
- Learn practical ways to strategically and systematically use data

Book Description Principles of Strategic Data Science is created to help you join the dots between mathematics, programming, and business analysis. With a unique approach that bridges the gap between mathematics and computer science, this book takes you through the entire data science pipeline. The book begins by explaining what data science is and how organizations can use it to revolutionize the way they use their data. It then discusses the criteria for soundness of data products and how to best visualize information. As you progress, you'll discover the strategic aspects of data science by learning the five-phase framework that enables you to enhance the value you extract from data. The final chapter of the book discusses the role of a data science manager in helping an organization take the data-driven approach. By the end of this book, you'll have a good understanding of data science and how it can enable you to extract value from your data. What you will learn

- Get familiar with the five most important steps of data science
- Use the Conway diagram to visualize the technical skills of the data science team
- Understand the limitations of data science from a mathematical and ethical perspective
- Get a quick overview of machine learning
- Gain insight into the purpose of using data science in your work
- Understand the role of data science managers and their expectations
- Who this book is for

This book is ideal for data scientists and data analysts who are looking

for a practical guide to strategically and systematically use data. This book is also useful for those who want to understand in detail what is data science and how can an organization take the data-driven approach. Prior programming knowledge of Python and R is assumed.

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