

Exploring Big Historical Data The Historians Macroscope

This book demonstrates the use of a wide range of strategic engineering concepts, theories and applied case studies to improve the safety, security and sustainability of complex and large-scale engineering and computer systems. It first details the concepts of system design, life cycle, impact assessment and security to show how these ideas can be brought to bear on the modeling, analysis and design of information systems with a focused view on cloud-computing systems and big data analytics. This informative book is a valuable resource for graduate students, researchers and industry-based practitioners working in engineering, information and business systems as well as strategy.

Historical scholarship is currently undergoing a digital turn. All historians have experienced this change in one way or another, by writing on word processors, applying quantitative methods on digitalized source materials, or using internet resources and digital tools. Digital Histories showcases this emerging wave of digital history research. It presents work by historians who – on their own or through collaborations with e.g. information technology specialists – have uncovered new, empirical historical knowledge through digital and computational methods. The topics of the volume range from the medieval period to the present day, including various parts of Europe. The chapters apply an exemplary array of methods, such as digital metadata analysis, machine learning, network analysis, topic modelling, named entity recognition, collocation analysis, critical search, and text and data mining. The volume argues that digital

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history is entering a mature phase, digital history ‘in action’, where its focus is shifting from the building of resources towards the making of new historical knowledge. This also involves novel challenges that digital methods pose to historical research, including awareness of the pitfalls and limitations of the digital tools and the necessity of new forms of digital source criticisms. Through its combination of empirical, conceptual and contextual studies, Digital Histories is a timely and pioneering contribution taking stock of how digital research currently advances historical scholarship.

Recent developments in computer technology are providing historians with new ways to see—and seek to hear, touch, or smell—traces of the past. Place-based augmented reality applications are an increasingly common feature at heritage sites and museums, allowing historians to create immersive, multifaceted learning experiences. Now that computer vision can be directed at the past, research involving thousands of images can recreate lost or destroyed objects or environments, and discern patterns in vast datasets that could not be perceived by the naked eye. *Seeing the Past with Computers* is a collection of twelve thought-pieces on the current and potential uses of augmented reality and computer vision in historical research, teaching, and presentation. The experts gathered here reflect upon their experiences working with new technologies, share their ideas for best practices, and assess the implications of—and imagine future possibilities for—new methods of historical study. Among the experimental topics they explore are the use of augmented reality that empowers students to challenge the presentation of historical material in their textbooks; the application of seeing computers to unlock unusual cultural knowledge, such as the secrets of vaudevillian stage magic; hacking facial recognition technology to reveal victims of racism in a century-old

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Australian archive; and rebuilding the soundscape of an Iron Age village with aural augmented reality. This volume is a valuable resource for scholars and students of history and the digital humanities more broadly. It will inspire them to apply innovative methods to open new paths for conducting and sharing their own research.

The use of computation in archaeology is a kind of magic, a way of heightening the archaeological imagination. Agent-based modelling allows archaeologists to test the 'just-so' stories they tell about the past. It requires a formalization of the story so that it can be represented as a simulation; researchers are then able to explore the unintended consequences or emergent outcomes of stories about the past. Agent-based models are one end of a spectrum that, at the opposite side, ends with video games. This volume explores this spectrum in the context of Roman archaeology, addressing the strengths, weaknesses, and opportunities of a formalized approach to computation and archaeogaming.

The United States census provides researchers, students, and the public with some of the richest and broadest information available about the American people. Exploring the U.S. Census by Frank Donnelly gives social science students and researchers alike the tools to understand, extract, process, and analyze data from the decennial census, the American Community Survey, and other data collected by the U.S. Census Bureau. More than just a data collection exercise performed every ten years, the census is a series of datasets updated on an ongoing basis. With all that data comes opportunities and challenges: opportunities to teach students the value of census data for studying communities and answering research questions, and the challenges of navigating and comprehending such a massive data source and transforming it into usable information that students and researchers can analyze with basic

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skills and software. Just as important as showing what the census can tell social researchers is showing how to ask good questions of census data. Exploring the U.S. Census provides a thorough background on the data collection methods, structures, and potential pitfalls of the census for unfamiliar researchers, collecting information previously available only in widely disparate sources into one handy guide. Hands-on, applied exercises at the end of the chapters help readers dive into the data. The first chapter of the book places the census into context, discussing the history and the role of the census in society as well as in the larger universe of government, open, and big data. The book then moves onto the essentials of the data structure including the variety of sources and searching mechanisms, geography from nation down to zip code, and the fundamental subject categories (social, economic, and geographic) that are used for summarizing data in all of the various datasets. The next section delves into the individual datasets, discussing the purpose and structure of each, with separate chapters devoted to the decennial census, ACS, Population Estimates Program, and business datasets. A final chapter for this section pulls everything together, with a focus on writing and presenting your research on the data. The final section covers advanced topics and applications including mapping, geographic information systems, creating new variables and measures from census data, historical census data, and microdata. Along the way, the author shows how best to analyze census data with open-source software and tools, such as QGIS geographic information system, LibreOffice® Calc, and the DB Browser for SQLite®. Readers can freely evaluate the data on their own computers, in keeping with the free and open data provided by the Census Bureau. By placing the census in the context of the open data movement, this text makes the history and practice of the census relevant so readers can

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understand what a crucial resource the United States census is for research and knowledge. Every day, more and more kinds of historical data become available, opening exciting new avenues of inquiry but also new challenges. This updated and expanded book describes and demonstrates the ways these data can be explored to construct cultural heritage knowledge, for research and in teaching and learning. It helps humanities scholars to grasp Big Data in order to do their work, whether that means understanding the underlying algorithms at work in search engines or designing and using their own tools to process large amounts of information. Demonstrating what digital tools have to offer and also what 'digital' does to how we understand the past, the authors introduce the many different tools and developing approaches in Big Data for historical and humanistic scholarship, show how to use them, what to be wary of, and discuss the kinds of questions and new perspectives this new macroscopic perspective opens up. Originally authored 'live' online with ongoing feedback from the wider digital history community, Exploring Big Historical Data breaks new ground and sets the direction for the conversation into the future. Exploring Big Historical Data should be the go-to resource for undergraduate and graduate students confronted by a vast corpus of data, and researchers encountering these methods for the first time. It will also offer a helping hand to the interested individual seeking to make sense of genealogical data or digitized newspapers, and even the local historical society who are trying to see the value in digitizing their holdings. In this Second Edition of this radical social history of America from Columbus to the present, Howard Zinn includes substantial coverage of the Carter, Reagan and Bush years and an Afterword on the Clinton presidency. Its commitment and vigorous style mean it will be compelling reading for under-graduate and post-graduate students and scholars in American

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social history and American studies, as well as the general reader.

For students anxious about statistics, this hands-on workbook is packed with clear explanations, real-world examples and practical exercises to gain the necessary maths skills to tackle statistics with confidence. Grounded in a social science context, it features:

- Clear introductions to symbols and tasks
- Multiple choice questions and exercises
- Real world case studies and datasets
- A glossary of terms

The book offers plenty of opportunities to practice through the accompanying online resources, which also includes datasets and a selection of author videos.

First released in the Spring of 1999, *How People Learn* has been expanded to show how the theories and insights from the original book can translate into actions and practice, now making a real connection between classroom activities and learning behavior. This edition includes far-reaching suggestions for research that could increase the impact that classroom teaching has on actual learning. Like the original edition, this book offers exciting new research about the mind and the brain that provides answers to a number of compelling questions. When do infants begin to learn? How do experts learn and how is this different from non-experts? What can teachers and schools do--with curricula, classroom settings, and teaching methods--to help children learn most effectively? New evidence from many branches of science has significantly added to our understanding of what it means to know, from the neural processes

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that occur during learning to the influence of culture on what people see and absorb. *How People Learn* examines these findings and their implications for what we teach, how we teach it, and how we assess what our children learn. The book uses exemplary teaching to illustrate how approaches based on what we now know result in in-depth learning. This new knowledge calls into question concepts and practices firmly entrenched in our current education system. Topics include: How learning actually changes the physical structure of the brain. How existing knowledge affects what people notice and how they learn. What the thought processes of experts tell us about how to teach. The amazing learning potential of infants. The relationship of classroom learning and everyday settings of community and workplace. Learning needs and opportunities for teachers. A realistic look at the role of technology in education.

Power beaming is the ability to move energy without moving or employing mass between an energy input and energy output. It is an emerging technology that could reshape how we generate and distribute energy and how our devices and autonomous systems are powered. This comprehensive compendium provides the foundation needed for researchers, technology developers, and end users to understand the promise and challenges for power beaming. By establishing a common nomenclature and conceptual approach to the analysis and assessment

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of power beaming systems, this unique reference text provides a true status of advancements in the field, and lays the groundwork for fruitful future research and applications.

An original methodological framework for approaching the archived web, both as a source and as an object of study in its own right. As life continues to move online, the web becomes increasingly important as a source for understanding the past. But historians have yet to formulate a methodology for approaching the archived web as a source of study. How should the history of the present be written? In this book, Niels Brügger offers an original methodological framework for approaching the web of the past, both as a source and as an object of study in its own right. While many studies of the web focus solely on its use and users, Brügger approaches the archived web as a semiotic, textual system in order to offer the first book-length treatment of its scholarly use. While the various forms of the archived web can challenge researchers' interactions with it, they also present a range of possibilities for interpretation. The Archived Web identifies characteristics of the online web that are significant now for scholars, investigates how the online web became the archived web, and explores how the particular digitality of the archived web can affect a historian's research process. Brügger offers suggestions for how to translate traditional historiographic methods for the

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study of the archived web, focusing on provenance, creating an overview of the archived material, evaluating versions, and citing the material. The Archived Web lays the foundations for doing web history in the digital age, offering important and timely guidance for today's media scholars and tomorrow's historians. Funded by the National Science Foundation and written by members of the American Statistical Association and the National Council of Teachers of Mathematics, this series introduces and teaches important topics in a secondary math curriculum.

"A 22-volume, highly illustrated, A-Z general encyclopedia for all ages, featuring sections on how to use World Book, other research aids, pronunciation key, a student guide to better writing, speaking, and research skills, and comprehensive index"--

Cape Town, South Africa, 7 Sept. 2016 – 8 Sept. 2016. Theme: Sustainable economies in the information economy. Purpose: To share the quality academic papers presented at the International Conference on Business and Management Dynamics (ICBMD) held from 7 to 8 September 2016 at African Pride Crystal Hotel and Spa in Cape Town. As grey literature, the proceedings are the contributions made by researchers at the conference and are considered the written record of the work that was presented to fellow conference delegates.

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Methodology: The methodology used varies from researcher to researcher but are suitable for the studies conducted. Thus, on the one hand, studies that were subjective in nature used the interpretive paradigm, where the qualitative approach adopted made use of the interview method to collect data. On the other hand, studies that were objectively inclined adopted the positivist philosophy and used survey questionnaires to collect data. However, there were some academic papers which used mixed methodology because of the nature of the study. Whatever methodology used adhered to the ethos of the philosophies underpinning the methodology.

Contribution made to scholarship: The articles come from individual researchers and each article in the proceedings is unique. Mostly, there is no general argument leading from one contribution to the next. However, it is interesting to note that in the area of economic performance it was evident that real exchange rate and net foreign direct investment contribute more towards innovations in economic growth. With regard to human capital development, papers presented evidence that there exists a definite need to explore the phenomenon of personal branding as limited scientific academic research has been done within the field of personal branding or on elements of the topic. Thus, the outcome argues that personal branding has an influence on leadership style which in turn impacts on organisational performance and related

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hygiene factors. Furthermore, it was demonstrated that current methods or strategies for enforcing institutionalisation of knowledge sharing within an organisation have not been successful, and, as such, new strategies are needed to reinforce efforts to nurture and invigorate the institutionalisation of knowledge sharing within an organisation. With regard to technology and big data impact on organisational performance, it was evident that system performance, memory consumption and CPU utilisation can be used as criteria to compare and evaluate big data technologies to improve organisational performance. Most of the articles' contribution reemphasised technology education and training as a means of digitising business and improving effectiveness. Target audience: The target readership is academic researchers and business leaders who require access to the latest developments in the fields of economics, information management, business, education, development studies, social sciences and technology. It is also for policymakers and other stakeholders who need a better understanding of the impact of new developments on existing policies and regulations for their review or amendment.

This book leapfrogs over the usual pedagogical progression, taking readers to a real understanding of quantum, relativistic, nuclear and particle physics. These areas are usually reserved for the end of one's undergraduate career or even for

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graduate students in physics programs, but do not need to be. The Scenic Route is really created out of the joy of science; it is not designed to produce problem-solving ability but rather is designed to reveal some physics that is just plain nifty. Guided by an understanding that much of modern physics is available to almost everyone with a moderate mathematical vocabulary, we lead the student through a short, trenchant tour of quantum physics, relativity, modern particle physics and its history.

This book provides a basic introduction to Sustainability & Sustainable Developments, integrated with current business models and future business prospects. In 10 chapters, the authors cover a wide array of topics comprehensively, in an accessible style of language that will appeal to the uninitiated. Many eye-catching self-illustrated artworks, coupled with in-depth analyses of numerous case studies, allow the reader to grasp the theoretical concepts with ease. Multiple-choice exercises at the end of every chapter (with answers provided) further aid readers in verifying their own understanding. Sustainability for Beginners hopes to encourage effective learning, improve abstract thinking, and culminate sustainable entrepreneurship among students and innovators.

The two centuries after 1800 witnessed a series of sweeping changes in the way in which

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Britain was governed, the duties of the state, and its role in the wider world. Powerful processes--from the development of democracy, the changing nature of the social contract, war, and economic dislocation--have challenged, and at times threatened to overwhelm, both governors and governed. Such shifts have also presented challenges to the historians who have researched and written about Britain's past politics. This Handbook shows the ways in which political historians have responded to these challenges, providing a snapshot of a field which has long been at the forefront of conceptual and methodological innovation within historical studies. It comprises thirty-three thematic essays by leading and emerging scholars in the field. Collectively, these essays assess and rethink the nature of modern British political history itself and suggest avenues and questions for future research. The Oxford Handbook of Modern British Political History thus provides a unique resource for those who wish to understand Britain's political past and a thought-provoking 'long view' for those interested in current political challenges.

This edited volume focuses on big data implications for computational social science and humanities from management to usage. The first part of the book covers geographic data, text corpus data, and social media data, and exemplifies their concrete applications in a wide range of fields including anthropology, economics, finance, geography, history, linguistics, political science, psychology, public health, and mass communications. The second part of the book provides a panoramic view of the development of big data in the fields of computational social sciences and humanities. The following questions are addressed: why is there a need for novel data governance for this new type of data?, why is big data important for social scientists?, and how will it revolutionize the way social scientists conduct research? With the advent of the

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information age and technologies such as Web 2.0, ubiquitous computing, wearable devices, and the Internet of Things, digital society has fundamentally changed what we now know as "data", the very use of this data, and what we now call "knowledge". Big data has become the standard in social sciences, and has made these sciences more computational. Big Data in Computational Social Science and Humanities will appeal to graduate students and researchers working in the many subfields of the social sciences and humanities.

Are you a non-native English speaker? Are you often confronted with manuscript rejections because of poor language impeding comprehension of your paper? A Practical Guide to Scientific and Technical Translation is your solution. In this one-stop guide, two authors with extensive experience as reviewers and translators in a vast medley of scientific fields assist you to produce professional quality documents, whether through direct authoring in a language foreign to you or translation from an existing text. The book is not intended as a text on English grammar but as a troubleshooting guide to linguistic and style errors. We will help you overcome at least the most common problems here. Technical terminology searching and choice will also be covered with examples from a number of engineering disciplines (aviation, transport, nuclear, environment, civil engineering, etc.), with advice on how to choose the right term for the right job. While the emphasis is on producing documents in English (the lingua franca of modern scientific literature), general translation concepts are also discussed. Hence, A Practical Guide to Scientific and Technical Translation will also be useful to translators, and scientists who need to present their work in languages other than English.

Throughout Germany's tumultuous twentieth century, photography was an indispensable form of documentation. Whether acting as artists, witnesses, or reformers, both professional and

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amateur photographers chronicled social worlds through successive periods of radical upheaval. The Ethics of Seeing brings together an international group of scholars to explore the complex relationship between the visual and the historic in German history. Emphasizing the transformation of the visual arena and the ways in which ordinary people made sense of world events, these revealing case studies illustrate photography's multilayered role as a new form of representation, a means to subjective experience, and a fresh mode of narrating the past.

This book presents research into the urban archaeology of 19th-century Australia. It focuses on the detailed archaeology of 20 cesspits in The Rocks area of Sydney and the Commonwealth Block site in Melbourne. It also includes discussions of a significant site in Sydney – First Government House. The book is anchored around a detailed comparison of contents of 20 cesspits created during the 19th century, and examines patterns of similarity and dissimilarity, presenting analyses that work towards an integration of historical and archaeological data and perspectives. The book also outlines a transnational framework of comparison that assists in the larger context related to building a truly global archaeology of the modern city. This framework is directly related a multi-scalar approach to urban archaeology. Historical archaeologists have been advocating the need to explore the archaeology of the modern city using several different scales or frames of reference. The most popular (and most basic) of these has been the household. However, it has also been acknowledged that interpreting the archaeology of households beyond the notion that every household and associated archaeological assemblage is unique requires archaeologists and historians to compare and contrast, and to establish patterns. These comparisons frequently

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occur at the level of the area or district in the same city, where archaeologists seek to derive patterns that might be explained as being the result of status, class, ethnicity, or ideology. Other less frequent comparisons occur at larger scales, for example between cities or countries, acknowledging that the archaeology of the modern western city is also the archaeology of modern global forces of production, consumption, trade, immigration and ideology formation. This book makes a contribution to that general literature

?This pioneering book teaches readers to use R within four core analytical areas applicable to the Humanities: networks, text, geospatial data, and images. This book is also designed to be a bridge: between quantitative and qualitative methods, individual and collaborative work, and the humanities and social sciences. Humanities Data with R does not presuppose background programming experience. Early chapters take readers from R set-up to exploratory data analysis (continuous and categorical data, multivariate analysis, and advanced graphics with emphasis on aesthetics and facility). Following this, networks, geospatial data, image data, natural language processing and text analysis each have a dedicated chapter. Each chapter is grounded in examples to move readers beyond the intimidation of adding new tools to their research. Everything is hands-on: networks are explained using U.S. Supreme Court opinions, and low-level NLP methods are applied to short stories by Sir Arthur Conan Doyle. After working through these examples with the provided data, code and book website, readers are prepared to apply new methods to their own work. The open source R programming language, with its myriad packages and popularity within the sciences and social sciences, is particularly well-suited to working with humanities data. R packages are also highlighted in an appendix. This book uses an expanded conception of the forms data may take and the information it

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represents. The methodology will have wide application in classrooms and self-study for the humanities, but also for use in linguistics, anthropology, and political science. Outside the classroom, this intersection of humanities and computing is particularly relevant for research and new modes of dissemination across archives, museums and libraries. ?

The Web has been with us now for almost 25 years. An integral part of our social, cultural and political lives, 'new media' is simply not that new anymore. Despite the rapidly expanding archives of information at our disposal, and the recent growth of interest in web history as a field of research, the information available to us still far outstrips our understanding of how to interpret it. The SAGE Handbook of Web History marks the first comprehensive review of this subject to date. Its editors emphasise two main different forms of study: the use of the web as an historical resource, and the web as an object of study in its own right. Bringing together all the existing knowledge of the field, with an interdisciplinary focus and an international scope, this is an incomparable resource for researchers and students alike. Part One: The Web and Historiography Part Two: Theoretical and Methodological Reflections Part Three: Technical and Structural Dimensions of Web History Part Four: Platforms on the Web Part Five: Web History and Users, some Case Studies Part Six: The Roads Ahead

"Havill's problem-driven approach introduces algorithmic concepts in context and motivates students with a wide range of interests and backgrounds." -- Janet Davis, Associate Professor and Microsoft Chair of Computer Science, Whitman College "This book looks really great and takes exactly the approach I think should be used for a CS 1 course. I think it really fills a need in the textbook landscape." -- Marie desJardins, Dean of the College of Organizational, Computational, and Information Sciences, Simmons University "Discovering Computer Science

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is a refreshing departure from introductory programming texts, offering students a much more sincere introduction to the breadth and complexity of this ever-growing field." -- James Deverick, Senior Lecturer, The College of William and Mary "This unique introduction to the science of computing guides students through broad and universal approaches to problem solving in a variety of contexts and their ultimate implementation as computer programs." -- Daniel Kaplan, DeWitt Wallace Professor, Macalester College

Discovering Computer Science: Interdisciplinary Problems, Principles, and Python Programming is a problem-oriented introduction to computational problem solving and programming in Python, appropriate for a first course for computer science majors, a more targeted disciplinary computing course or, at a slower pace, any introductory computer science course for a general audience. Realizing that an organization around language features only resonates with a narrow audience, this textbook instead connects programming to students' prior interests using a range of authentic problems from the natural and social sciences and the digital humanities. The presentation begins with an introduction to the problem-solving process, contextualizing programming as an essential component. Then, as the book progresses, each chapter guides students through solutions to increasingly complex problems, using a spiral approach to introduce Python language features. The text also places programming in the context of fundamental computer science principles, such as abstraction, efficiency, testing, and algorithmic techniques, offering glimpses of topics that are traditionally put off until later courses. This book contains 30 well-developed independent projects that encourage students to explore questions across disciplinary boundaries, over 750 homework exercises, and 300 integrated reflection questions engage students in problem solving and active reading. The accompanying website —

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<https://www.discoveringcs.net> — includes more advanced content, solutions to selected exercises, sample code and data files, and pointers for further exploration.

Believe it or not, the 1990s are history. As historians turn to study this period and beyond, they will encounter a historical record that is radically different from what has ever existed before. Old websites, social media, blogs, photographs, and videos are all part of the massive quantities of digital information that technologists, librarians, archivists, and organizations such as the Internet Archive have been collecting for the past three decades. In *History in the Age of Abundance?* Ian Milligan argues that web-based historical sources and their archives present extraordinary opportunities as well as daunting technical and ethical challenges for historians. Through case studies, he outlines the approaches, methods, tools, and search functions that can help a historian turn web documents into historical sources. He also considers the implications of the size and scale of digital sources, which amount to more information than historians have ever had at their fingertips, and many of which are by and about people who have traditionally been absent from the historical record. Scrutinizing the concept of the web and the mechanics of its archives, Milligan explains how these new media challenge, reshape, and enrich both the historical profession and the historical record. A wake-up call for historians of the twenty-first century,

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History in the Age of Abundance? is an essential introduction to the way web archives work, what possibilities they open up, what risks they entail, and what the shift to digital information means for historians, their professional training and organization, and society as a whole.

The book considers the challenges of navigating in a pathogenic world. It includes articles and reviews from top scientists from around the world who weigh in with their perspectives on the global pandemic, comparing this to other disease outbreaks and modes of treatment. It also offers insight into new breakthroughs in combatting the current pandemic and future disease. The combination of these varied approaches offer a unique consideration of the current challenges that the world now faces as well as for those that lie ahead. Interest in big data has swelled within the scholarly community as has increased attention to the internet of things (IoT). Algorithms are constructed in order to parse and analyze all this data to facilitate the exchange of information. However, big data has suffered from problems in connectivity, scalability, and privacy since its birth. The application of deep learning algorithms has helped process those challenges and remains a major issue in today's digital world. Advanced Deep Learning Applications in Big Data Analytics is a pivotal reference source that aims to develop new architecture and applications of deep learning algorithms in

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big data and the IoT. Highlighting a wide range of topics such as artificial intelligence, cloud computing, and neural networks, this book is ideally designed for engineers, data analysts, data scientists, IT specialists, programmers, marketers, entrepreneurs, researchers, academicians, and students.

This book has a collection of articles written by Big Data experts to describe some of the cutting-edge methods and applications from their respective areas of interest, and provides the reader with a detailed overview of the field of Big Data Analytics as it is practiced today. The chapters cover technical aspects of key areas that generate and use Big Data such as management and finance; medicine and healthcare; genome, cytome and microbiome; graphs and networks; Internet of Things; Big Data standards; bench-marking of systems; and others. In addition to different applications, key algorithmic approaches such as graph partitioning, clustering and finite mixture modelling of high-dimensional data are also covered. The varied collection of themes in this volume introduces the reader to the richness of the emerging field of Big Data Analytics.

Fully updated and carefully revised, this new 2nd edition of History by Numbers still stands alone as the only textbook on quantitative methods suitable for students of history. Even the numerically challenged will find inspiration. Taking a problem-solving approach and using authentic historical data, it describes each

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method in turn, including its origin, purpose, usefulness and associated pitfalls. The problems are developed gradually and with narrative skill, allowing readers to experience the moment of discovery for each of the interpretative outcomes. Quantitative methods are essential for the modern historian, and this lively and accessible text will prove an invaluable guide for anyone entering the discipline. Social Complexity and Complex Systems in Archaeology turns to complex systems thinking in search of a suitable framework to explore social complexity in Archaeology. Social complexity in archaeology is commonly related to properties of complex societies such as states, as opposed to so-called simple societies such as tribes or chiefdoms. These conceptualisations of complexity are ultimately rooted in Eurocentric perspectives with problematic implications for the field of archaeology. This book provides an in-depth conceptualisation of social complexity as the core concept in archaeological and interdisciplinary studies of the past, integrating approaches from complex systems thinking, archaeological theory, social practice theory, and sustainability and resilience science. The book covers a long-term perspective of social change and stability, tracing the full cycle of complexity trajectories, from emergence and development to collapse, regeneration and transformation of communities and societies. It offers a broad vision on social complexity as a core concept for the present and future

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development of archaeology. This book is intended to be a valuable resource for students and scholars in the field of archaeology and related disciplines such as history, anthropology, sociology, as well as the natural sciences studying human-environment interactions in the past.

Every day, more and more kinds of historical data become available, opening exciting new avenues of inquiry but also new challenges. This updated and expanded book describes and demonstrates the ways these data can be explored to construct cultural heritage knowledge, for research and in teaching and learning. It helps humanities scholars to grasp Big Data in order to do their work, whether that means understanding the underlying algorithms at work in search engines or designing and using their own tools to process large amounts of information. Demonstrating what digital tools have to offer and also what 'digital' does to how we understand the past, the authors introduce the many different tools and developing approaches in Big Data for historical and humanistic scholarship, show how to use them, what to be wary of, and discuss the kinds of questions and new perspectives this new macroscopic perspective opens up. Originally authored 'live' online with ongoing feedback from the wider digital history community, Exploring Big Historical Data breaks new ground and sets the direction for the conversation into the future. Exploring Big Historical

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Data should be the go-to resource for undergraduate and graduate students confronted by a vast corpus of data, and researchers encountering these methods for the first time. It will also offer a helping hand to the interested individual seeking to make sense of genealogical data or digitized newspapers, and even the local historical society who are trying to see the value in digitizing their holdings.

The colorful charts, graphs, and maps presented at the 1900 Paris Exposition by famed sociologist and black rights activist W. E. B. Du Bois offered a view into the lives of black Americans, conveying a literal and figurative representation of "the color line." From advances in education to the lingering effects of slavery, these prophetic infographics —beautiful in design and powerful in content—make visible a wide spectrum of black experience. W. E. B. Du Bois's *Data Portraits* collects the complete set of graphics in full color for the first time, making their insights and innovations available to a contemporary imagination. As Maria Popova wrote, these data portraits shaped how "Du Bois himself thought about sociology, informing the ideas with which he set the world ablaze three years later in *The Souls of Black Folk*."

This timely and lucid guide is intended for students and scholars working on all historical periods and topics in the humanities and social sciences--especially for

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those who do not think of themselves as experts in quantification, "big data," or "digital humanities." The authors reveal quantification to be a powerful and versatile tool, applicable to a myriad of materials from the past. Their book, accessible to complete beginners, offers detailed advice and practical tips on how to build a dataset from historical sources and how to categorize it according to specific research questions. Drawing on examples from works in social, political, economic, and cultural history, the book guides readers through a wide range of methods, including sampling, cross-tabulations, statistical tests, regression, factor analysis, network analysis, sequence analysis, event history analysis, geographical information systems, text analysis, and visualization. The requirements, advantages, and pitfalls of these techniques are presented in layperson's terms, avoiding mathematical terminology. Conceived primarily for historians, the book will prove invaluable to other humanists, as well as to social scientists looking for a nontechnical introduction to quantitative methods. Covering the most recent techniques, in addition to others not often enough discussed, the book will also have much to offer to the most seasoned practitioners of quantification.

The Digital Humanities have arrived at a moment when digital Big Data is becoming more readily available, opening exciting new avenues of inquiry but

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also new challenges. This pioneering book describes and demonstrates the ways these data can be explored to construct cultural heritage knowledge, for research and in teaching and learning. It helps humanities scholars to grasp Big Data in order to do their work, whether that means understanding the underlying algorithms at work in search engines, or designing and using their own tools to process large amounts of information. Demonstrating what digital tools have to offer and also what 'digital' does to how we understand the past, the authors introduce the many different tools and developing approaches in Big Data for historical and humanistic scholarship, show how to use them, what to be wary of, and discuss the kinds of questions and new perspectives this new macroscopic perspective opens up. Authored 'live' online with ongoing feedback from the wider digital history community, Exploring Big Historical Data breaks new ground and sets the direction for the conversation into the future. It represents the current state-of-the-art thinking in the field and exemplifies the way that digital work can enhance public engagement in the humanities. Exploring Big Historical Data should be the go-to resource for undergraduate and graduate students confronted by a vast corpus of data, and researchers encountering these methods for the first time. It will also offer a helping hand to the interested individual seeking to make sense of genealogical data or digitized newspapers,

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and even the local historical society who are trying to see the value in digitizing their holdings. The companion website to Exploring Big Historical Data can be found at <http://www.themacroscope.org/>. On this site you will find code, a discussion forum, essays, and datafiles that accompany this book.

DATA VISUALIZATION: Exploring and Explaining with Data is designed to introduce best practices in data visualization to undergraduate and graduate students. The book contains material on effective design, choice of chart type, effective use of color, how to explore data visually, and how to explain concepts and results visually in a compelling way with data. In an increasingly data-driven economy, these concepts are becoming more important for analysts, natural scientists, social scientists, engineers, medical professionals, business professionals, and virtually everyone who needs to interact with data. Indeed, the skills developed in this book will be helpful to all who want to influence with data or be accurately informed by data. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

This book introduces various widely available exploratory data analysis methods, emphasizing those that are most useful in the preliminary exploration of large datasets involving mixed data types. Topics include descriptive statistics,

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graphical analysis tools, regression modeling and spectrum estimation, along with practical issues like outliers, missing data, and variable selection.

"The definitive reference on literacy research methods, this book serves as a key resource for researchers and as a text in graduate-level courses. Distinguished scholars clearly describe established and emerging methodologies, discuss the types of questions and claims for which each is best suited, identify standards of quality, and present exemplary studies that illustrate the approaches at their best. The book demonstrates how each mode of inquiry can yield unique insights into literacy learning and teaching and how the methods can work together to move the field forward"--

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