Benfords Law Applications For Forensic Accounting Auditing And Fraud Detection Wiley Corporate F A

This is a book on symplectic topology, a rapidly developing field of mathematics which originated as a geometric tool for problems of classical mechanics. Since the 1980s, powerful methods such as Gromov's pseudo-holomorphic curves and Morse-Floer theory on loop spaces gave rise to the discovery of unexpected symplectic phenomena. The present book focuses on function spaces associated with a symplectic manifold. A number of recent advances show that these spaces exhibit intriguing properties and structures, giving rise to an alternative intuition and new tools in symplectic topology. The book provides an essentially self-contained introduction into these developments along with applications to symplectic topology, algebra and geometry of symplectomorphism groups, Hamiltonian dynamics and quantum mechanics. It will appeal to researchers and students from the graduate level onwards. I like the spirit of this book. It formulates concepts clearly and explains the relationship between them. The subject matter is important and interesting. --Dusa McDuff, Barnard College, Columbia University This is a very important book, coming at the right moment. The book is a remarkable mix of introductory chapters and research topics at the very forefront of actual research. It is full of cross fertilizations of different theories, and will be useful to Ph.D. students and researchers in symplectic geometry as well as to many researchers in other fields (geometric group theory, functional analysis, mathematical quantum mechanics). It is also perfectly suited for a Ph.D.-students seminar. --Felix Schlenk, Universite de Neuchatel

This volume constitutes the proceedings of the 8th International Congress on BIGDATA 2019, held as Part of SCF 2019 in San Diego, CA, USA in June 2019. The 9 full papers presented in this volume were carefully reviewed and selected from 14 submissions. They cover topics such as: Big Data Models and Algorithms; Big Data Architectures; Big Data Management; Big Data Protection, Integrity and Privacy; Security Applications of Big Data; Big Data Search and Mining; Big Data for Enterprise, Government and Society.

The two-volume set LNCS 11136 and 11137 constitutes the refereed proceedings of the 17th International Semantic Web Conference, ISWC 2018, held in Monterey, USA, in October 2018. The ISWC conference is the premier international forum for the Semantic Web / Linked Data Community. The total of 62 full papers included in this volume was selected from 250 submissions. The conference is organized in three tracks: for the Research Track 39 full papers were selected from 164 submissions. The Resource Track contains 17 full papers, selected from 55 submissions; and the In-Use track features 6 full papers which were selected from 31 submissions to this track.

Benford's LawApplications for Forensic Accounting, Auditing, and Fraud DetectionJohn Wiley & Sons

The definitive, must-have guide for the forensic accounting professional Financial Forensics Body of Knowledge is the unique, innovative, and definitive guide and technical reference work for the financial forensics and/or forensic accounting professional, including nearly 300 forensic tools, techniques, methods and methodologies apply to virtually all civil, criminal and dispute matters. Many of the tools have never before been published. It defines the profession: "The Art & Science of Investigating People & Money." It defines Forensic Operators: "...financial forensics-capable personnel... possess unique and specific skills, knowledge, experience, education, training, and integrity to function in the financial forensics discipline." It defines why: "If you understand financial forensics you understand fraud, but not vice versa" by applying financial forensics to all aspects of the financial community. It contains a book-within-a-book Companion Section for financial valuation and litigation specialists. It defines foundational financial forensics/forensic accounting methodologies: FAIM, Forensic Accounting Investigation Methodology, ICE/SCORE, CICO, APD, forensic lexicology, and others. It contains a Reader Lookup Table that permits everyone in the financial community to immediately focus on the pertinent issues.

This book contains extended and revised papers from the 16th International Conference on Enterprise Information Systems, ICEIS 2014, held in Lisbon, Portugal, in April 2014. The 24 papers presented in this volume were carefully reviewed and selected from a total of 313 submissions. The book also contains two full-paper invited talks. The selected papers reflect state-of-the-art research that is oriented toward real-world applications and highlight the benefits of information systems and technology for industry and services. They are organized in topical sections on databases and information systems integration, artificial intelligence and decision support systems, information systems analysis and specification, software agents and Internet computing, human–computer interaction, and enterprise architecture.

We are hard-wired to believe that the world is more predictable than it is. We chase ‘winning streaks’ that are often just illusions, and we are all too predictable exactly when we try hardest not to be. In the 1970s, Daniel Kahneman and Amos Tversky coined the phrase ‘representativeness’ to describe the psychology of this behaviour. Since then representativeness has been used by auditors to catch people fiddling their tax returns and by hedge fund managers to reap billions from the emotions of small investors. Now Poundstone for the first time makes these techniques fun, easy, and profitable for everyone, in the everyday situations that matter. You’ll learn how to tackle multiple choice tests, what internet passwords to avoid, how to up your odds of winning the office Premier League sweepstakes, and the best ways to invest your money.

Discover the latest edition of a practical introduction to the theory of probability, complete with R code samples In the newly revised Second Edition of Probability: With Applications and R, distinguished researchers Drs. Robert Dobrow and Amy Wagaman deliver a thorough introduction to the foundations of probability theory. The book includes a host of chapter exercises, examples in R with included code, and well-explained solutions. With new and improved discussions on reproducibility for random numbers and how to set seeds in R, and organizational changes, the new edition will be of use to anyone taking their first probability course within a mathematics, statistics, engineering, or data science program. New exercises and supplemental materials support more engagement with R, and include new code samples to accompany examples in a variety of chapters and sections that didn’t include them in the first edition. The new edition also includes for the first time: A thorough discussion of reproducibility in the context of generating random numbers Revised sections and exercises on conditioning, and a renewed description of specifying PMFs and PDFs Substantial organizational changes to improve the flow of the material Additional descriptions and supplemental examples to the bivariate sections to assist students with a limited understanding of calculus Perfect for upper-level undergraduate students in a first course on probability theory, Probability: With Applications and R is also ideal for researchers seeking to learn probability from the ground up or those self-studying probability for the purpose of taking advanced coursework or preparing for actuarial exams.

This book focuses on structural changes and economic modeling. It presents papers describing how to model structural changes, as well as those introducing improvements to the existing before-structural-changes models, making it easier to later on combine these models with techniques describing structural changes. The book also includes related theoretical developments and practical applications of the resulting techniques to economic problems. Most traditional mathematical models of economic processes describe how the corresponding quantities change with time. However, in addition to such relatively smooth numerical changes, economical phenomena often undergo more drastic structural change. Describing such structural changes is not easy, but it is vital if we want to have a more adequate description of economic phenomena – and thus, more accurate and more reliable predictions and a better understanding on how best to influence the economic situation.

A powerful new tool for all forensic accountants, or anyone who analyzes data that may have been altered Benford's Law gives the expected patterns of the digits in the numbers in tabulated data such as town and city populations or Madoff's fictitious portfolio returns. Those digits, in unaltered data, will not occur in equal proportions; there is a large bias towards the lower digits, so much so that nearly one-half of all numbers are expected to start with the digits 1 or 2. These patterns were originally discovered by physicist Frank Benford in the early 1930s, and have since been found to apply to all tabulated data. Mark J. Nigrini has been a pioneer in applying Benford's Law to auditing and forensic accounting, even before his groundbreaking 1999 Journal of Accountancy article introducing this useful tool to the accounting world. In Benford's Law, Nigrini shows the widespread applicability of Benford's Law and its practical uses to detect fraud, errors, and other anomalies. Explores primary, associated, and advanced tests, all described with data sets that include corporate payments data and election data Includes ten fraud detection studies, including vendor fraud, payroll fraud, due diligence when purchasing a business, and tax evasion Covers financial statement fraud, with data from Enron, AIG, and companies that were the target of hedge fund short sales Looks at how to detect Ponzi schemes, including data on Madoff, Waxenberg, and more Examines many other applications, from the Clinton tax returns and the charitable gifts of Lehman Brothers to tax evasion and number invention Benford's Law has 250 figures and uses 50 interesting authentic and fraudulent real-world data sets to explain both theory and practice, and concludes with an agenda and directions for future research. The companion website adds additional information and resources.

A practical guide to outguessing everything, from multiple-choice tests to the office football pool to the stock market. People are predictable even when they try not to be. William Poundstone demonstrates how to turn this fact to personal advantage in scores of everyday situations, from playing the lottery to buying a home. Rock Breaks Scissors is mind-reading for real life. Will the next tennis serve go right or left? Will the market go up or down? Most people are poor at that kind of predicting. We are hard-wired to make bum bets on "trends" and "winning streaks" that are illusions. Yet ultimately we're all in the business of anticipating the actions of others. Poundstone reveals how to overcome the errors and improve the accuracy of your own outguessing. Rock Breaks Scissors is a hands-on guide to turning life's odds in your favor.

Become the forensic analytics expert in your organization using effective and efficient data analysis tests to find anomalies, biases, and potential fraud—the updated new edition Forensic Analytics reviews the methods and techniques that forensic accountants can use to detect intentional and unintentional errors, fraud, and biases. This updated second edition shows accountants and auditors how analyzing their corporate or public sector data can highlight transactions, balances, or subsets of transactions or balances in need of attention. These tests are made up of a set of initial high-level overview tests followed by a series of more focused tests. These focused tests use a variety of quantitative methods including Benford’s Law, outlier detection, the detection of duplicates, a comparison to benchmarks, time-series methods, risk-scoring, and sometimes simply statistical logic. The tests in the new edition include the newly developed vector variation score that quantifies the change in an array of data from one period to the next. The goals of the tests are to either produce a small sample of suspicious transactions, a small set of transaction groups, or a risk score related to individual transactions or a group of items. The new edition includes over two hundred figures. Each chapter, where applicable, includes one or more cases showing how the tests under discussion could have detected the fraud or anomalies. The new edition also includes two chapters each describing multi-million-dollar fraud schemes and the insights that can be learned from those examples. These interesting real-world examples help to make the text accessible and understandable for accounting professionals and accounting students without rigorous backgrounds in mathematics and statistics. Emphasizing practical applications, the new edition shows how to use either Excel or Access to run these analytics tests. The book also has some coverage on using Minitab, IDEA, R, and Tableau to run forensic-focused tests. The use of SAS and Power BI rounds out the software coverage. The software screenshots use the latest versions of the software available at the time of writing. This authoritative book: Describes the use of statistically-based techniques including Benford’s Law, descriptive statistics, and the vector variation score to detect errors and anomalies Shows how to run most of the tests in Access and Excel, and other data analysis software packages for a small sample of the tests Applies the tests under review in each chapter to the same purchasing card data from a government entity Includes interesting cases studies throughout that are linked to the tests being reviewed. Includes two comprehensive case studies where data analytics could have detected the frauds before they reached multi-million-dollar levels Includes a continually-updated companion website with the data sets used in the chapters, the queries used in the chapters, extra coverage of some topics or cases, end of chapter questions, and end of chapter cases. Written by a prominent educator and researcher in forensic accounting and auditing, the new edition of Forensic Analytics: Methods and Techniques for Forensic Accounting Investigations is an essential resource for forensic accountants, auditors, comptrollers, fraud investigators, and graduate students.

Contrary to common intuition that all digits should occur randomly with equal chances in real data, empirical examinations consistently show that not all digits are created equal, but rather that low digits such as {1, 2, 3} occur much more frequently than high digits such as {7, 8, 9} in almost all data types, such as those relating to geology, chemistry, astronomy, physics, and engineering, as well as in accounting, financial, econometrics, and demographics data sets. This intriguing digital phenomenon is known as Benford's Law. This book gives a comprehensive and in-depth account of all the theoretical aspects, results, causes and explanations of Benford's Law, with a strong emphasis on the connection to real-life data and the physical manifestation of the law. In addition to such a bird's eye view of the digital phenomenon, the conceptual distinctions between digits, numbers, and quantities are explored; leading to the key finding that the phenomenon is actually quantitative in nature; originating from the fact that in extreme generality, nature creates many small quantities but very few big quantities, corroborating the motto "small is beautiful", and that therefore all this is applicable just as well to data written in the ancient Roman, Mayan, Egyptian, and other digit-less civilizations. Fraudsters are typically not aware of this digital pattern and tend to invent numbers with approximately equal digital frequencies. The digital analyst can easily check reported data for compliance with this digital law, enabling the detection of tax evasion, Ponzi schemes, and other financial scams. The forensic fraud detection section in this book is written in a very concise and reader-friendly style; gathering all known methods and standards in the accounting and auditing industry; summarizing and fusing them into a singular coherent whole; and can be understood without deep knowledge in statistical theory or advanced mathematics. In addition, a digital algorithm is presented, enabling the auditor to detect fraud even when the sophisticated cheater is aware of the law and invents numbers accordingly. The algorithm employs a subtle inner digital pattern within the Benford's pattern itself. This newly discovered pattern is deemed to be nearly universal, being even more prevalent than the Benford phenomenon, as it is found in all random data sets, Benford as well as non-Benford types. Contents:Benford's LawForensic Digital AnalysisFraud DetectionData Compliance TestsConceptual and Mathematical FoundationsBenford's Law in the Physical SciencesTopics in Benford's LawThe Law of Relative Quantities Readership: Professionals, researchers and

serious students of financial and data analysis, forensic accounting, fraud investigation, auditing, mathematics and probability and statistics. Key Features:The book is a concise account of practical applications of the phenomenon of fraud detection and it corrects several errors committed in the field where mistaken applications are usedThe perceptive reader interested in knowing about the use of this digital law in fraud detection, would be able to learn about it with a minimal amount of effort and time, without searching through literally hundreds of various small articles on the topicThe book provides numerous new theoretical points-of-view of the phenomenon, new methods for testing data for compliance, and fuses many different aspects of the law into a singular explanationKeywords:Benford's Law;Digits;Quantities;Relative Quantities;Numbers;Fraud;Fraud Detection;Data;Data Analysis;Forensic Analysis;Pattern;Physics;Chemistry;Geology;Astronomy

Discover how to detect fraud, biases, or errors in your data using Access or Excel With over 300 images, Forensic Analytics reviews and shows how twenty substantive and rigorous tests can be used to detect fraud, errors, estimates, or biases in your data. For each test, the original data is shown with the steps needed to get to the final result. The tests range from high-level data overviews to assess the reasonableness of data, to highly focused tests that give small samples of highly suspicious transactions. These tests are relevant to your organization, whether small or large, for profit, nonprofit, or government-related. Demonstrates how to use Access, Excel, and PowerPoint in a forensic setting Explores use of statistical techniques such as Benford's Law, descriptive statistics, correlation, and time-series analysis to detect fraud and errors Discusses the detection of financial statement fraud using various statistical approaches Explains how to score locations, agents, customers, or employees for fraud risk Shows you how to become the data analytics expert in your organization Forensic Analytics shows how you can use Microsoft Access and Excel as your primary data interrogation tools to find exceptional, irregular, and anomalous records.

The 23rd EUROCALL conference was organised by the Cyprus University of Technology Language Centre. The theme of the conference was “CALL communities and Culture”. Between the 24th and 27th August 2016, over 135 presentations were delivered and 27 posters were presented; 84 of these presentations appear in this volume of selected peer-reviewed short papers.

This volume of Advances in Intelligent Systems and Computing highlights papers presented at the 12th International Conference on Genetic and Evolutionary Computing (ICGEC 2018). Held from 14 to 17 December 2018 in Changzhou, Jiangsu, China, the conference was co-sponsored by Springer, Changzhou College of Information Technology, Fujian Provincial Key Lab of Big Data Mining and Applications, Fujian University of Technology, National Demonstration Center for Experimental Electronic Information and Electrical Technology Education, Fujian University of Technology, Tajen University, National University of Kaohsiung, and Shandong University of Science and Technology, China. The conference is intended as an international forum for the researchers and professionals in all areas of genetic and evolutionary computing.

This book provides the first comprehensive treatment of Benford's law, the surprising logarithmic distribution of significant digits discovered in the late nineteenth century. Establishing the mathematical and statistical principles that underpin this intriguing phenomenon, the text combines up-to-date theoretical results with overviews of the law’s colorful history, rapidly growing body of empirical evidence, and wide range of applications. An Introduction to Benford’s Law begins with basic facts about significant digits, Benford functions, sequences, and random variables, including tools from the theory of uniform distribution. After introducing the scale-, base-, and sum-invariance characterizations of the law, the book develops the significant-digit properties of both deterministic and stochastic processes, such as iterations of functions, powers of matrices, differential equations, and products, powers, and mixtures of random variables. Two concluding chapters survey the finitely additive theory and the flourishing applications of Benford’s law. Carefully selected diagrams, tables, and close to 150 examples illuminate the main concepts throughout. The text includes many open problems, in addition to dozens of new basic theorems and all the main references. A distinguishing feature is the emphasis on the surprising ubiquity and robustness of the significant-digit law. This text can serve as both a primary reference and a basis for seminars and courses.

This is the most authoritative and accessible single-volume reference book on applied mathematics. Featuring numerous entries by leading experts and organized thematically, it introduces readers to applied mathematics and its uses; explains key concepts; describes important equations, laws, and functions; looks at exciting areas of research; covers modeling and simulation; explores areas of application; and more. Modeled on the popular Princeton Companion to Mathematics, this volume is an indispensable resource for undergraduate and graduate students, researchers, and practitioners in other disciplines seeking a user-friendly reference book on applied mathematics. Features nearly 200 entries organized thematically and written by an international team of distinguished contributors Presents the major ideas and branches of applied mathematics in a clear and accessible way Explains important mathematical concepts, methods, equations, and applications Introduces the language of applied mathematics and the goals of applied mathematical research Gives a wide range of examples of mathematical modeling Covers continuum mechanics, dynamical systems, numerical analysis, discrete and combinatorial mathematics, mathematical physics, and much more Explores the connections between applied mathematics and other disciplines Includes suggestions for further reading, cross-references, and a comprehensive index

Get practical insights on the psychology of white-collar criminals—and how to outsmart them Understand how the psychologies of fraudsters and their victims interact as well as what makes auditors/investigators/regulators let down their guard. Learn about the psychology of fraud victims, including boards of directors and senior management, and what makes them want to believe fraudsters, and therefore making them particularly vulnerable to deception. Just as IT experts gave us computer forensics, we now have a uniquely qualified team immersed in psychology, sociology, psychiatry as well as accounting and auditing, introducing the emerging field of behavioral forensics to address the phenomenon of fraud. Ever wonder what makes a white-collar criminal tick? Why does she or he do what they do? For the first time ever, see the mind of the fraudster laid bare, including their sometimes twisted rationalizations; think like a crook to catch a crook! The A.B.C.'s of Behavioral Forensics takes you there, with expert advice from a diverse but highly specialized authoring team of professionals (three out of the four are Certified Fraud Examiners): a former accounting firm partner who has a PhD in psychology, a former FBI special agent who has been with investigative practices of two of the Big Four firms, an industrial psychiatrist who has worked closely with the C-level suite of large and small companies, and an accounting professor who has interviewed numerous convicted felons. Along with a fascinating exploration of what makes people fall for the common and not-so-common swindles, the book provides a sweeping characterization of the ecology of fraud using The A.B.C.'s of Behavioral Forensics paradigm: the bad Apple (rogue executive), the bad Bushel (groups that collude and behave like gangs), and the bad Crop (representing organization-wide or even societally-sanctioned cultures that are toxic and corrosive). The book will make you take a longer look when hiring new employees and offers a deeper more complex understanding of what happens in organizations and in their people. The A.B.C. model will also help those inside and outside organizations inoculate against fraud and make you reflect on instilling the core values of your organization among your people and create a culture of excellence and integrity that acts as a prophylactic against fraud. Ultimately, you will discover that, used wisely, behavioral methods

trump solely economic incentives. With business fraud on the rise globally, The A.B.C.'s of Behavioral Forensics is the must-have book for investigators, auditors, the C-suite and risk management professionals, the boards of directors, regulators, and HR professionals. Examines the psychology of fraud in a practical way, relating it to aspects of fraud prevention, deterrence, detection, and remediation Helps you understand that trust violation—the essence of fraud—is a betrayal of behavioral assumptions about "trusted" people Explains how good people go bad and how otherwise honest people cross the line Underscores the importance of creating a culture of excellence and integrity that inoculates an organization from fraud risk (i.e., honest behavior pays, while dishonesty is frowned upon) Provides key takeaways on what to look for when hiring new employees and in your current employees, as well as creating and maintaining a culture of control consciousness Includes narrative accounts of interviews with convicted white-collar criminals, as well as interpretive insights and analysis of their rationalizations Furnishes ideas about how to enhance professional skepticism, how to resist fraudsters, how to see through their schemes, how to infuse internal controls with the people/behavioral element, and make them more effective in addressing behavioral/integrity risks Provides a solid foundation for training programs across the fraud risk management life cycle all the way from the discovery of fraud to its investigation as well as remediation (so the same fraud doesn't happen again) Enables auditors/investigators to engage in self-reflection and avoid cognitive and emotional biases and traps that lead to professional judgment errors (e.g., overconfidence, confirmation, self-deception, groupthink, halo effect, availability, speed-accuracy trade-off, etc.) Ever since the accounting scandals surrounding Enron and WorldCom surfaced, leading to the passage of the Sarbanes Oxley Act of 2002, as well as the continuing fall out from the Wall Street financial crisis precipitating the Dodd-Frank Act of 2010, fraud has been a leading concern for executives globally. If you thought you knew everything there was to know about financial fraud, think again. Get the real scoop with The A.B.C.'s of Behavioral Forensics.

Detect fraud faster—no matter how well hidden—with IDEA automation Fraud and Fraud Detection takes an advanced approach to fraud management, providing step-by-step guidance on automating detection and forensics using CaseWare's IDEA software. The book begins by reviewing the major types of fraud, then details the specific computerized tests that can detect them. Readers will learn to use complex data analysis techniques, including automation scripts, allowing easier and more sensitive detection of anomalies that require further review. The companion website provides access to a demo version of IDEA, along with sample scripts that allow readers to immediately test the procedures from the book. Business systems' electronic databases have grown tremendously with the rise of big data, and will continue to increase at significant rates. Fraudulent transactions are easily hidden in these enormous datasets, but Fraud and Fraud Detection helps readers gain the data analytics skills that can bring these anomalies to light. Step-by-step instruction and practical advice provide the specific abilities that will enhance the audit and investigation process. Readers will learn to: Understand the different areas of fraud and their specific detection methods Identify anomalies and risk areas using computerized techniques Develop a step-by-step plan for detecting fraud through data analytics Utilize IDEA software to automate detection and identification procedures The delineation of detection techniques for each type of fraud makes this book a must-have for students and new fraud prevention professionals, and the step-by-step guidance to automation and complex analytics will prove useful for even experienced examiners. With datasets growing exponentially, increasing both the speed and sensitivity of detection helps fraud professionals stay ahead of the game. Fraud and Fraud Detection is a guide to more efficient, more effective fraud identification.

This book is a stimulating panoramic tour – quite different from a textbook journey – of the world of statistics in both its theory and practice, for teachers, students and practitioners. At each stop on the tour, the authors investigate unusual and quirky aspects of statistics, highlighting historical, biographical and philosophical dimensions of this field of knowledge. Each chapter opens with perspectives on its theme, often from several points of view. Five original and thought-provoking questions follow. These aim at widening readers’ knowledge and deepening their insight. Scattered among the questions are entertaining puzzles to solve and tantalising paradoxes to explain. Readers can compare their own statistical discoveries with the authors’ detailed answers to all the questions. The writing is lively and inviting, the ideas are rewarding, and the material is extensively cross-referenced. A Panorama of Statistics: Leads readers to discover the fascinations of statistics. Is an enjoyable companion to an undergraduate statistics textbook. Is an enriching source of knowledge for statistics teachers and practitioners. Is unique among statistics books today for its memorable content and engaging style. Lending itself equally to reading through and to dipping into, A Panorama of Statistics will surprise teachers, students and practitioners by the variety of ways in which statistics can capture and hold their interest. Reviews: "As befits the authors' statement that 'this is not a textbook', the structure is unusual. There are twenty-five chapters organised in five sections, each beginning with a brief perspective of a theme in statistics and finishing with five questions related to that theme. The answers provided to the questions, in section six, are as discursive and illuminating as the main body of the text. Even if you are pretty sure you know the answer, it is always worth checking what the authors have to say. Chances are that you will learn something every time. The glimpses and insights given into this enormous and far-reaching discipline succeed in being bewitching, entertaining and inviting; coverage was never the aim." "In summary, this splendid book lives up to the four 'p-values' of its title. It is panoramic in the scope of its survey of statistics, it is full of illuminating perspectives, it sets entertaining and challenging puzzles, and it explores fascinating paradoxes. Read it, enjoy it and learn from it." From Neil Sheldon, Teaching Statistics, volume 9, no. 2, May 2017

This book presents a general introduction to the computational aspects of forensic science, covering the different tools needed for forensic investigations, the importance of forensics and biometrics, and the use of Benford’s law for biometrics and network traffic analysis. It specifically focuses on the application of these techniques in Africa, and how they can be of benefit in the investigation of crime in Nigeria in particular.

This book constitutes the thoroughly refereed post-conference proceedings of the 7th International Workshop on Digital Watermarking, IWDW 2008, held in Busan, Korea, in November 2008. The 36 regular papers included in the volume were carefully reviewed and selected from 62 submissions. Areas of interest to the conference are mathematical modeling of embedding and detection; information theoretic, stochastic aspects of data hiding; security issues, including attacks and counter-attacks; combination of data hiding and cryptography; optimum watermark detection and reliable recovery; estimation of watermark capacity; channel coding techniques for watermarking; large-scale experimental tests and benchmarking; new statistical and perceptual models of content; reversible data hiding; data hiding in special media; data hiding and authentication; steganography and steganalysis; data forensics; copyright protection, DRM,

and forensic watermarking; and visual cryptography.

While corporate governance has been a successful concept throughout the centuries, it is in question whether this concept can remain sustainable in the digital era and during a time of technological and managerial disruption. Under the pressure of new economic, social, and ecologic challenges, it is vital to understand how this concept needs to transform. Challenges and Opportunities of Corporate Governance Transformation in the Digital Era is an essential reference source that discusses concepts, trends, and forecasts of corporate governance and examines its transformation under the pressure of new technologies and economic changes. Featuring research on topics such as corporate identity, e-commerce, and cost management, this book is ideally designed for corporate leaders, managers, executives, business professionals, consultants, professors, researchers, and students.

Mathematicians delight in finding surprising connections between seemingly disparate areas of mathematics. Whole domains of modern mathematics have arisen from exploration of such connections--consider analytic number theory or algebraic topology. Finding Ellipses is a delight-filled romp across a three-way unexpected connection between complex analysis, linear algebra, and projective geometry. The book begins with Blaschke products, complex-analytic functions that are generalizations of disk automorphisms. In the analysis of Blaschke products, we encounter, in a quite natural way, an ellipse inside the unit disk. The story continues by introducing the reader to Poncelet's theorem--a beautiful result in projective geometry that ties together two conics and, in particular, two ellipses, one circumscribed by a polygon that is inscribed in the second. The Blaschke ellipse and the Poncelet ellipse turn out to be the same ellipse, and the connection is illuminated by considering the numerical range of a 2×2 matrix. The numerical range is a convex subset of the complex plane that contains information about the geometry of the transformation represented by a matrix. Through the numerical range of $n \times n$ matrices, we learn more about the interplay between Poncelet's theorem and Blaschke products. The story ranges widely over analysis, algebra, and geometry, and the exposition of the deep and surprising connections is lucid and compelling. Written for advanced undergraduates or beginning graduate students, this book would be the perfect vehicle for an invigorating and enlightening capstone exploration. The exercises and collection of extensive projects could be used as an embarkation point for a satisfying and rich research project. You are invited to read actively using the accompanying interactive website, which allows you to visualize the concepts in the book, experiment, and develop original conjectures.

Corporate Fraud Exposed uncovers the motivations and drivers of fraud including agency theory, executive compensation, and organizational culture. It delves into the consequences of fraud for various firm stakeholders, and its spillover effects on other corporations, the political environment, and financial market participants.

An introduction to probability at the undergraduate level Chance and randomness are encountered on a daily basis. Authoredby a highly qualified professor in the field, Probability: WithApplications and R delves into the theories and applicationsessential to obtaining a thorough understanding of probability. With real-life examples and thoughtful exercises from fields asdiverse as biology, computer science, cryptology, ecology, publichealth, and sports, the book is accessible for a variety ofreaders. The book’s emphasis on simulation through the use ofthe popular R software language clarifies and illustrates keycomputational and theoretical results. Probability: With Applications and R helps readersdevelop problem-solving skills and delivers an appropriate mix oftheory and application. The book includes: Chapters covering first principles, conditional probability,independent trials, random variables, discrete distributions,continuous probability, continuous distributions, conditionaldistribution, and limits An early introduction to random variables and Monte Carlosimulation and an emphasis on conditional probability,conditioning, and developing probabilistic intuition An R tutorial with example script files Many classic and historical problems of probability as well asnontraditional material, such as Benford’s law, power-lawdistributions, and Bayesian statistics A topics section with suitable material for projects andexplorations, such as random walk on graphs, Markov chains, andMarkov chain Monte Carlo Chapter-by-chapter summaries and hundreds of practicalexercises Probability: With Applications and R is an ideal text fora beginning course in probability at the undergraduate level.

Designed to help accounting students and researchers make the most appropriate choice of method and strategy in the development of their research projects. This fifth edition features extended coverage of: Content analysis Online sources Mixed-methods research Impression management It includes new sections dedicated to: Social media impact on research Big Data Analytics Endogeneity issues in regression analysis Benford’s Law as a forensic tool Readability studies Whistleblowing research

This book addresses three main dimensions of risk management in emerging markets: 1) the effectiveness of risk management practices; 2) current issues and challenges in risk assessment and modelling in emerging market countries; 3) the responses of emerging markets to the recent financial crises and the design of risk management models.

In the 18 chapters in this volume of Contemporary Studies in Economic and Financial Analysis, expert contributors gather together to examine the extent and characteristics of forensic accounting, a field which has been practiced for many years, but is still not internationally regulated yet.

This book constitutes revised and selected papers from the 5th International Symposium on Security and Privacy in Social Networks and Big Data, SocialSec 2019, held in Copenhagen, Denmark, in July 2019. The 18 full papers and 3 short papers presented in this volume were carefully reviewed and selected from a total of 76 submissions. The papers in the volume cover a broad range of topics on security in Internet-of-things, Social Networks, User Authentication, Algorithm design, Artificial Intelligence, and Big Data.

The study of geometric discrepancy, which provides a framework for quantifying the quality of a distribution of a finite set of points, has experienced significant growth in recent decades. This book provides a self-contained course in number theory, Fourier analysis and geometric discrepancy theory, and the relations between them, at the advanced undergraduate or beginning graduate level. It starts as a traditional course in elementary number theory, and introduces the reader to subsequent material on uniform distribution of infinite sequences, and discrepancy of finite sequences. Both modern and classical aspects of the theory are discussed, such as Weyl's criterion, Benford's law, the Koksma–Hlawka inequality, lattice point problems, and irregularities of distribution for convex bodies. Fourier analysis also features prominently, for which the theory is developed in parallel, including topics such as convergence of Fourier series, one-sided trigonometric approximation, the Poisson summation formula, exponential sums, decay of Fourier transforms, and Bessel functions.

Benford's law states that the leading digits of many data sets are not uniformly distributed from one through nine, but rather exhibit a profound bias. This bias is evident in

everything from electricity bills and street addresses to stock prices, population numbers, mortality rates, and the lengths of rivers. Here, Steven Miller brings together many of the world's leading experts on Benford's law to demonstrate the many useful techniques that arise from the law, show how truly multidisciplinary it is, and encourage collaboration. Beginning with the general theory, the contributors explain the prevalence of the bias, highlighting explanations for when systems should and should not follow Benford's law and how quickly such behavior sets in. They go on to discuss important applications in disciplines ranging from accounting and economics to psychology and the natural sciences. The contributors describe how Benford's law has been successfully used to expose fraud in elections, medical tests, tax filings, and financial reports. Additionally, numerous problems, background materials, and technical details are available online to help instructors create courses around the book. Emphasizing common challenges and techniques across the disciplines, this accessible book shows how Benford's law can serve as a productive meeting ground for researchers and practitioners in diverse fields.

Impractical Python picks up where the complete beginners book leaves off, expanding on existing concepts and introducing new tools and techniques that you'll use every day. Just flip to any page, cookbook-style, and test your skills with software design, code optimization, and debugging. To keep thing interesting, each project includes a zany twist featuring historical incidents, pop culture, literature, comics, and the purely scientific.

Elections are random events. From individuals deciding whether to vote, to people deciding for whom to vote, to election authorities deciding what to count, the outcomes of competitive democratic elections are rarely known until election day...or beyond. Understanding Elections through Statistics: Polling, Prediction, and Testing explores this random phenomenon from two points of view: predicting the election outcome using opinion polls and testing the election outcome using government-reported data. Written for those with only a brief introduction to statistics, this book takes you on a statistical journey from how polls are taken to how they can—and should—be used to estimate current popular opinion. Once an understanding of the election process is built, we turn toward testing elections for evidence of unfairness. While holding elections has become the de facto proof of government legitimacy, those electoral processes may hide a dirty little secret of the government illicitly ensuring a favorable election outcome. This book includes these features designed to make your statistical journey more enjoyable: Vignettes of elections, including maps, to provide concrete bases for the material In-chapter cues to help one avoid the heavy math—or to focus on it End-of-chapter problems designed to review and extend that which was covered in the chapter Many opportunities to turn the power of the R statistical environment to the enclosed election data files, as well as to those you find interesting From these features, it is clear the audience for this book is quite diverse. This text provides mathematics for those interested in mathematics, but also offers detours for those who just want a good read and a deeper understanding of elections. Author Ole J. Forsberg holds PhDs in both political science and statistics. He currently teaches mathematics and statistics in the Department of Mathematics at Knox College in Galesburg, IL.

Digital forensics deals with the acquisition, preservation, examination, analysis and presentation of electronic evidence. Networked computing, wireless communications and portable electronic devices have expanded the role of digital forensics beyond traditional computer crime investigations. Practically every crime now involves some aspect of digital evidence; digital forensics provides the techniques and tools to articulate this evidence. Digital forensics also has myriad intelligence applications. Furthermore, it has a vital role in information assurance -- investigations of security breaches yield valuable information that can be used to design more secure systems. Advances in Digital Forensics VII describes original research results and innovative applications in the discipline of digital forensics. In addition, it highlights some of the major technical and legal issues related to digital evidence and electronic crime investigations. The areas of coverage include: Themes and Issues, Forensic Techniques, Fraud and Malware Investigations, Network Forensics, and Advanced Forensic Techniques. This book is the 7th volume in the annual series produced by the International Federation for Information Processing (IFIP) Working Group 11.9 on Digital Forensics, an international community of scientists, engineers and practitioners dedicated to advancing the state of the art of research and practice in digital forensics. The book contains a selection of 21 edited papers from the 7th Annual IFIP WG 11.9 International Conference on Digital Forensics, held at the National Center for Forensic Science, Orlando, Florida, USA in the spring of 2011. Advances in Digital Forensics VII is an important resource for researchers, faculty members and graduate students, as well as for practitioners and individuals engaged in research and development efforts for the law enforcement and intelligence communities. Gilbert Peterson is an Associate Professor of Computer Engineering at the Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA. Sujeet Shenoi is the F.P. Walter Professor of Computer Science at the University of Tulsa, Tulsa, Oklahoma, USA.

The Industrial Revolution 4.0 will not only cause job losses, but will also create new workspaces that may not exist today. It also needs to be considered by accountants in government because the processes of budget planning, budget execution, and financial reporting have used a large number of information systems. In the era of the Industrial Revolution 4.0, the changes will be faster, marked by the emergence of such systems as supercomputers, smart robots, cloud computing, big data systems, genetic engineering and the development of neurotechnology that allows humans to optimize brain function further. Industrial Revolution 4.0 will disrupt the accounting profession. This proceedings provides selected papers/research on government accounting, accountability and integrity public sector accounting, financial accounting, accounting information system, auditing and assurance, corporate sustainability, forensic and management accounting, public and corporate finance, taxation and customs, open innovation in public sector accounting. The proceedings provide details beyond what is possible to be included in an oral presentation and constitute a concise but timely medium for the dissemination of recent research results. It will be invaluable to professionals and academics in the field of accounting, finance and the public sector to get an understanding of recent research.

The Encyclopedia of Deception examines lying from multiple perspectives drawn from the disciplines of social psychology, sociology, history, business, political science, cultural

anthropology, moral philosophy, theology, law, family studies, evolutionary biology, philosophy, and more. From the “little white lie,” to lying on a resume, to the grandiose lies of presidents, this two-volume reference explores the phenomenon of lying in a multidisciplinary context to elucidate this common aspect of our daily lives. Not only a cultural phenomenon historically, lying is a frequent occurrence in our everyday lives. Research shows that we are likely to lie or intentionally deceive others several times a day or in one out of every four conversations that lasts more than 10 minutes. Key Features: More than 360 authored by key figures in the field are organized A-to-Z in two volumes, which are available in both print and electronic formats. Entries are written in a clear and accessible style that invites readers to explore and reflect on the use of lying and self-deception. Each article concludes with cross references to related entries and further readings. This academic, multi-author reference work will serve as a general, non-technical resource for students and researchers within social and behavioral science programs who seek to better understand the historical role of lying and how it is employed in modern society.
This book constitutes the refereed proceedings of the 8th International Conference on Electronic Government and the Information Systems Perspective, EGOVIS 2019, held in Linz, Austria, in August 2019. The 17 full papers presented were carefully reviewed and selected from 25 submissions. The papers are organized in the following topical sections: open data and open innovation; data-driven approaches in e-government; e-government cases – data and knowledge management; e-government theoretical background; and digitalization and transparency.