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Networks, Crowds, and Markets Reasoning About a Highly Connected World Cambridge University Press Are all film stars linked to Kevin Bacon? Why do the stock markets rise and fall sharply on the strength of a vague rumour? How does gossip spread so quickly? Are we all related through six degrees of separation? There is a growing awareness of the complex networks that pervade modern society. We see them in the rapid growth of the Internet, the ease of global communication, the swift spread of news and information, and in the way epidemics and financial crises develop with startling speed and intensity. This introductory book on the new science of networks takes an interdisciplinary approach, using economics, sociology, computing, information science and applied mathematics to address fundamental questions about the links that connect us, and the ways that our decisions can have consequences for others. Introduction to High Performance Computing for Scientists and Engineers CRC Press Written by high performance computing (HPC) experts, Introduction to High Performance Computing for Scientists and Engineers provides a solid introduction to current mainstream computer architecture, dominant parallel programming models, and useful optimization strategies for scientific HPC. From working in a scientific computing center, the author The Network Reshapes the Library Lorcan Dempsey on Libraries, Services and Networks American Library Association Since he began posting in 2003, Dempsey has used his blog to explore nearly every important facet of library technology, from the emergence of Web 2.0 as a concept to open source ILS tools and the push to web-scale library management systems. Networks, Crowds, and Markets Reasoning about a Highly Connected World Cambridge University Press Over the past decade there has been a growing public fascination with the complex connectedness of modern society. This connectedness is found in many incarnations: in the rapid growth of the Internet, in the ease with which global communication takes place, and in the ability of news and information as well as epidemics and financial crises to spread with surprising speed and intensity. These are phenomena that involve networks, incentives, and the aggregate behavior of groups of people; they are based on the links that connect us and the ways in which our decisions can have subtle consequences for others. This introductory undergraduate textbook takes an interdisciplinary look at economics, sociology, computing and information science, and applied mathematics to understand networks and behavior. It describes the emerging field of study that is growing at the interface of these areas, addressing fundamental questions about how the social, economic, and technological worlds are connected. Networked Life 20 Questions and Answers Cambridge University Press How does the Internet really work? This book explains the technology behind it all, in simple question and answer format. A Course in Networks and Markets Game-theoretic Models and Reasoning MIT Press A graduate-level, mathematically rigorous introduction to strategic behavior in a networked world. This introductory graduate-level text uses tools from game theory and graph theory to examine the role of network structures and network effects in economic and information markets. The goal is for students to develop an intuitive and mathematically rigorous understanding of how strategic agents interact in a connected world. The text synthesizes some of the central results in the field while also simplifying their treatment to make them more accessible to nonexperts. Thus, students at the introductory level will gain an understanding of key ideas in the field that are usually only taught at the advanced graduate level. The book introduces basic concepts from game theory and graph theory as well as some fundamental algorithms for exploring graphs. These tools are then applied to analyze strategic interactions over social networks, to explore different types of markets and mechanisms for networks, and to study the role of beliefs and higher-level beliefs (beliefs about beliefs). Specific topics discussed include coordination and contagion on social networks, traffic networks, matchings and matching markets, exchange networks, auctions, voting, web search, models of belief and knowledge, and how beliefs affect auctions and markets. An appendix offers a "Primer on Probability." Mathematically rigorous, the text assumes a level of mathematical maturity (comfort with definitions and proofs) in the reader. High-Performance Modelling and Simulation for Big Data Applications Selected Results of the COST Action IC1406 cHiPSet Springer This open access book was prepared as a Final Publication of the COST Action IC1406 "High-Performance Modelling and Simulation for Big Data Applications (cHiPSet)" project. Long considered important pillars of the scientific method, Modelling and Simulation have evolved from traditional discrete numerical methods to complex data-intensive continuous analytical optimisations. Resolution, scale, and accuracy have become essential to predict and analyse natural and complex systems in science and engineering. When their level of abstraction raises to have a better discernment of the domain at hand, their representation gets increasingly demanding for computational and data resources. On the other hand, High Performance Computing typically entails the effective use of parallel and distributed processing units coupled with efficient storage, communication and visualisation systems to underpin complex data-intensive applications in distinct scientific and technical domains. It is then arguably required to have a seamless interaction of High Performance Computing with Modelling and Simulation in order to store, compute, analyse, and visualise large data sets in science and engineering. Funded by the European Commission, cHiPSet has provided a dynamic trans-European forum for their members and distinguished guests to openly discuss novel perspectives and topics of interests for these two communities. This cHiPSet compendium presents a set of selected case studies related to healthcare, biological data, computational advertising, multimedia, finance, bioinformatics, and telecommunications. Probability, Choice, and Reason CRC Press Much of our thinking is flawed because it is based on faulty intuition. By using the framework and tools of probability and statistics, we can overcome this to provide solutions to many real-world problems and paradoxes. We show how to do this, and find answers that are frequently very contrary to what we might expect. Along the way, we venture into diverse realms and thought experiments which challenge the way that we see the world. Features: An insightful and engaging discussion of some of the key ideas of probabilistic and statistical thinking Many classic and novel problems, paradoxes, and puzzles An exploration of some of the big questions involving the use of choice and reason in an uncertain world The application of probability, statistics, and Bayesian methods to a wide range of subjects, including economics, finance, law, and medicine Exercises, references, and links for those wishing to cross-reference or to probe further Solutions to exercises at the end of the book This book should serve as an invaluable and fascinating resource for university, college, and high school students who wish to extend their reading, as well as for teachers and lecturers who want to liven up their courses while retaining academic rigour. It will also appeal to anyone who wishes to develop skills with numbers or has an interest in the many statistical and other paradoxes that permeate our lives. Indeed, anyone studying the sciences, social sciences, or humanities on a formal or informal basis will enjoy and benefit from this book. Complex Network Analysis in Python Recognize - Construct - Visualize - Analyze - Interpret Pragmatic Bookshelf Construct, analyze, and visualize networks with networkx, a Python language module. Network analysis is a powerful tool you can apply to a multitude of datasets and situations. Discover how to work with all kinds of networks, including social, product, temporal, spatial, and semantic networks. Convert almost any real-world data into a complex network--such as recommendations on co-using cosmetic products, muddy hedge fund connections, and online friendships. Analyze and visualize the network, and make business decisions based on your analysis. If you're a curious Python programmer, a data scientist, or a CNA specialist interested in mechanizing mundane tasks, you'll increase your productivity exponentially. Complex network analysis used to be done by hand or with non-programmable network analysis tools, but not anymore! You can now automate and program these tasks in Python. Complex networks are collections of connected items, words, concepts, or people. By exploring their structure and individual elements, we can learn about their meaning, evolution, and resilience. Starting with simple networks, convert real-life and synthetic network graphs into networkx data structures. Look at more sophisticated networks and learn more powerful machinery to handle centrality calculation, blockmodeling, and clique and community detection. Get familiar with presentation-quality network visualization tools, both programmable and interactive--such as Gephi, a CNA explorer. Adapt the patterns from the case studies to your problems. Explore big networks with NetworKit, a high-performance networkx substitute. Each part in the book gives you an overview of a class of networks, includes a practical study of networkx functions and techniques, and concludes with case studies from various fields, including social networking, anthropology, marketing, and sports analytics. Combine your CNA and Python programming skills to become a better network analyst, a more accomplished data scientist, and a more versatile programmer. What You Need: You will need a Python 3.x installation with the following additional modules: Pandas (>=0.18), NumPy (>=1.10), matplotlib (>=1.5), networkx (>=1.11), python-louvain (>=0.5), NetworKit (>=3.6), and generalizesimilarity. We recommend using the Anaconda distribution that comes with all these modules, except for python-louvain, NetworKit, and generalizedsimilarity, and works on all major modern operating systems. Random Graphs and Complex Networks Cambridge University Press This classroom-tested text is the definitive introduction to the mathematics of network science, featuring examples and numerous exercises. Symmetry A Mathematical Exploration Springer Nature This textbook is perfect for a math course for non-math majors, with the goal of encouraging effective analytical thinking and exposing students to elegant mathematical ideas. It includes many topics commonly found in sampler courses, like Platonic solids, Euler's formula, irrational numbers, countable sets, permutations, and a proof of the Pythagorean Theorem. All of these topics serve a single compelling goal: understanding the mathematical patterns underlying the symmetry that we observe in the physical world around us. The exposition is engaging, precise and rigorous. The theorems are visually motivated with intuitive proofs appropriate for the intended audience. Students from all majors will enjoy the many beautiful topics herein, and will come to better appreciate the powerful cumulative nature of mathematics as these topics are woven together into a single fascinating story about the ways in which objects can be symmetric. Dynamical Systems on Networks A Tutorial Springer This volume is a tutorial for the study of dynamical systems on networks. It discusses both methodology and models, including spreading models for social and biological contagions. The authors focus especially on "simple" situations that are analytically tractable, because they are insightful and provide useful springboards for the study of more complicated scenarios. This tutorial, which also includes key pointers to the literature, should be helpful for junior and senior undergraduate students, graduate students, and researchers from mathematics, physics, and engineering who seek to study dynamical systems on networks but who may not have prior experience with graph theory or networks. Mason A. Porter is Professor of Nonlinear and Complex Systems at the Oxford Centre for Industrial and Applied Mathematics, Mathematical Institute, University of Oxford, UK. He is also a member of the CABDyN Complexity Centre and a Tutorial Fellow of Somerville College. James P. Gleeson is Professor of Industrial and Applied Mathematics, and co-Director of MACSI, at the University of Limerick, Ireland. Organizations and Organizing Rational, Natural and Open Systems Perspectives Routledge This broad, balanced introduction to organizational studies enables the reader to compare and contrast different approaches to the study of organizations. This book is a valuable tool for the reader, as we are all intertwined with organizations in one form or another. Numerous other disciplines besides sociology are addressed in this book, including economics, political science, strategy and management theory. Topic areas discussed in this book are the importance of organizations; defining organizations; organizations as rational, natural, and open systems; environments, strategies, and structures of organizations; and organizations and society. For those employed in fields where knowledge of organizational theory is necessary, including sociology, anthropology, cognitive psychology, industrial engineering, managers in corporations and international business, and business strategists. Twenty Lectures on Algorithmic Game Theory Cambridge University Press Computer science and economics have engaged in a lively interaction over the past fifteen years, resulting in the new field of algorithmic game theory. Many problems that are central to modern computer science, ranging from resource allocation in large networks to online advertising, involve interactions between multiple self-interested parties. Economics and game theory offer a host of useful models and definitions to reason about such problems. The flow of ideas also travels in the other direction, and

concepts from computer science are increasingly important in economics. This book grew out of the author's Stanford University course on algorithmic game theory, and aims to give students and other newcomers a quick and accessible introduction to many of the most important concepts in the field. The book also includes case studies on online advertising, wireless spectrum auctions, kidney exchange, and network management. Society and Economy Framework and Principles Harvard University Press A work of exceptional ambition by the founder of modern economic sociology, this first full account of Mark Granovetter's ideas stresses that the economy is not a sphere separate from other human activities but is deeply embedded in social relations and subject to the same emotions, ideas, and constraints as religion, science, politics, or law. Introduction to Graph Signal Processing Cambridge University Press An intuitive and accessible text explaining the fundamentals and applications of graph signal processing. Requiring only an elementary understanding of linear algebra, it covers both basic and advanced topics, including node domain processing, graph signal frequency, sampling, and graph signal representations, as well as how to choose a graph. Understand the basic insights behind key concepts and learn how graphs can be associated to a range of specific applications across physical, biological and social networks, distributed sensor networks, image and video processing, and machine learning. With numerous exercises and Matlab examples to help put knowledge into practice, and a solutions manual available online for instructors, this unique text is essential reading for graduate and senior undergraduate students taking courses on graph signal processing, signal processing, information processing, and data analysis, as well as researchers and industry professionals. Game Theory And Mechanism Design World Scientific This book offers a self-sufficient treatment of a key tool, game theory and mechanism design, to model, analyze, and solve centralized as well as decentralized design problems involving multiple autonomous agents that interact strategically in a rational and intelligent way. The contents of the book provide a sound foundation of game theory and mechanism design theory which clearly represent the "science" behind traditional as well as emerging economic applications for the society.The importance of the discipline of game theory has been recognized through numerous Nobel prizes in economic sciences being awarded to game theorists, including the 2005, 2007, and 2012 prizes. The book distills the marvelous contributions of these and other celebrated game theorists and presents it in a way that can be easily understood even by senior undergraduate students.A unique feature of the book is its detailed coverage of mechanism design which is the art of designing a game among strategic agents so that a social goal is realized in an equilibrium of the induced game. Another feature is a large number of illustrative examples that are representative of both classical and modern applications of game theory and mechanism design. The book also includes informative biographical sketches of game theory legends, and is specially customized to a general engineering audience.After a thorough reading of this book, readers would be able to apply game theory and mechanism design in a principled and mature way to solve relevant problems in computer science (esp, artificial intelligence/machine learning), computer engineering, operations research, industrial engineering and microeconomics. The Amazing Journey of Reason from DNA to Artificial Intelligence Springer Nature This Open Access book explores questions such as why and how did the first biological cells appear? And then complex organisms, brains, societies and –now– connected human societies? Physicists have good models for describing the evolution of the universe since the Big Bang, but can we apply the same concepts to the evolution of aggregated matter –living matter included? The Amazing Journey analyzes the latest results in chemistry, biology, neuroscience, anthropology and sociology under the light of the evolution of intelligence, seen as the ability of processing information. The main strength of this book is using just two concepts used in physics –information and energy- to explain: The emergence and evolution of life: procaryotes, eukaryotes and complex organisms The emergence and evolution of the brain The emergence and evolution of societies (human and not) Possible evolution of our "internet society" and the role that Artificial Intelligence is playing Health Equity, Diversity, and Inclusion: Context, Controversies, and Solutions Context, Controversies, and Solutions Jones & Bartlett Learning The new second edition of this forward-thinking text goes beyond the discussion of health disparities to highlight the importance of health equity. As the title suggests, Health Equity, Diversity and Inclusion: Contexts, Controversies, and Solutions helps the reader understand key social justice issues relevant to health disparities and/or health equity, taking the reader from the classroom to the real world to implement new solutions. The new Second Edition features: • Two new chapters: one on the impact of urban education on urban health and another covering the elderly and health equity •Updated and enhanced coverage on men's health, demographic data, the importance of cultural proficiency, maternal mortality and Black women, and much more. • Current trends and movements, including the role of social media in the provision of health care information for improved health literacy; mass incarceration and criminal justice reform; and much more. Social Media Mining An Introduction Cambridge University Press Integrates social media, social network analysis, and data mining to provide an understanding of the potentials of social media mining. Mastering Gephi Network Visualization Packt Publishing Ltd This book is intended for anyone interested in advanced network analysis. If you wish to master the skills of analyzing and presenting network graphs effectively, then this is the book for you. No coding experience is required to use this book, although some familiarity with the Gephi user interface will be helpful. Mathematics of Epidemics on Networks From Exact to Approximate Models Springer This textbook provides an exciting new addition to the area of network science featuring a stronger and more methodical link of models to their mathematical origin and explains how these relate to each other with special focus on epidemic spread on networks. The content of the book is at the interface of graph theory, stochastic processes and dynamical systems. The authors set out to make a significant contribution to closing the gap between model development and the supporting mathematics. This is done by: Summarising and presenting the state-of-the-art in modeling epidemics on networks with results and readily usable models signposted throughout the book; Presenting different mathematical approaches to formulate exact and solvable models; Identifying the concrete links between approximate models and their rigorous mathematical representation; Presenting a model hierarchy and clearly highlighting the links between model assumptions and model complexity; Providing a reference source for advanced undergraduate students, as well as doctoral students, postdoctoral researchers and academic experts who are engaged in modeling stochastic processes on networks; Providing software that can solve differential equation models or directly simulate epidemics on networks. Replete with numerous diagrams, examples, instructive exercises, and online access to simulation algorithms and readily usable code, this book will appeal to a wide spectrum of readers from different backgrounds and academic levels. Appropriate for students with or without a strong background in mathematics, this textbook can form the basis of an advanced undergraduate or graduate course in both mathematics and other departments alike. Infostorms Why do we 'like'? Explaining individual behavior on the social net. Springer With points of departure in philosophy, logic, social psychology, economics, and choice and game theory, Infostorms shows how information may be used to improve the quality of personal decision and group thinking but also warns against the informational pitfalls which modern information technology may amplify: From science to reality culture and what it really is, that makes you buy a book like this. The information society is upon us. New technologies have given us back pocket libraries, online discussion forums, blogs, crowdbased opinion aggregators, social media and breaking news wherever, whenever. But are we more enlightened and rational because of it? Infostorms provides the nuts and bolts of how irrational group behaviour may get amplified by social media and information technology. If we could be collectively dense before, now we can do it at light speed with potentially global reach. That's how things go viral, that is how cyberbullying, rude comments online, opinion bubbles, status bubbles, political polarisation and a host of other everyday unpleasantries start. Infostorms will give the story of the mechanics of these phenomena. This will help you to avoid them if you want or learn to start them if you must. It will allow you to stay sane in an insane world of information. "With this brilliant book, we have been warned. It is up to all of us in the world today to be stewards of he common resource that is trustworthy and relevant information". Adam Brandenburger, Stern School of Business, NYU "It is a highly recommended read for social scientists and concerned citizens alike". Christian List, London School of Economics The Internet of Things in the Cloud A Middleware Perspective CRC Press Although the Internet of Things (IoT) is a vast and dynamic territory that is evolving rapidly, there has been a need for a book that offers a holistic view of the technologies and applications of the entire IoT spectrum. Filling this void, The Internet of Things in the Cloud: A Middleware Perspective provides a comprehensive introduction to the IoT and its development worldwide. It gives you a panoramic view of the IoT landscape—focusing on the overall technological architecture and design of a tentatively unified IoT framework underpinned by Cloud computing from a middleware perspective. Organized into three sections, it: Describes the many facets of Internet of Things—including the four pillars of IoT and the three layer value chain of IoT Focuses on middleware, the glue and building blocks of a holistic IoT system on every layer of the architecture Explores Cloud computing and IoT as well as their synergy based on the common background of distributed processing The book is based on the author's two previous bestselling books (in Chinese) on IoT and Cloud computing and more than two decades of hands-on software/middleware programming and architecting experience at organizations such as the Oak Ridge National Laboratory, IBM, BEA Systems, and Silicon Valley startup Doubletwist. Tapping into this wealth of knowledge, the book categorizes the many facets of the IoT and proposes a number of paradigms and classifications about Internet of Things' mass and niche markets and technologies. Machine Learning for Hackers Case Studies and Algorithms to Get You Started "O'Reilly Media, Inc." If you're an experienced programmer interested in crunching data, this book will get you started with machine learning—a toolkit of algorithms that enables computers to train themselves to automate useful tasks. Authors Drew Conway and John Myles White help you understand machine learning and statistics tools through a series of hands-on case studies, instead of a traditional math-heavy presentation. Each chapter focuses on a specific problem in machine learning, such as classification, prediction, optimization, and recommendation. Using the R programming language, you'll learn how to analyze sample datasets and write simple machine learning algorithms. Machine Learning for Hackers is ideal for programmers from any background, including business, government, and academic research. Develop a naïve Bayesian classifier to determine if an email is spam, based only on its text Use linear regression to predict the number of page views for the top 1,000 websites Learn optimization techniques by attempting to break a simple letter cipher Compare and contrast U.S. Senators statistically, based on their voting records Build a "whom to follow" recommendation system from Twitter data Link Mining: Models, Algorithms, and Applications Springer Science & Business Media This book offers detailed surveys and systematic discussion of models, algorithms and applications for link mining, focusing on theory and technique, and related applications: text mining, social network analysis, collaborative filtering and bioinformatics. Concentration and Power in the Food System Who Controls What We Eat?, Revised Edition Bloomsbury Publishing Who controls what we eat? This book reveals how dominant corporations, from the supermarket to the seed industry, exert control over contemporary food systems. It analyzes the strategies these firms are using to reshape society in order to further increase their power, particularly in terms of their bearing upon the more vulnerable sections of society, such as recent immigrants, ethnic minorities and those of lower socioeconomic status. Yet this study also shows that these trends are not inevitable. Opposed by numerous efforts, from microbreweries to seed saving networks, it explores how opposition to this has encouraged even the most powerful firms to make small but positive changes. This revised edition has been updated to reflect recent developments in the food system, as well as the broad political economic forces that shape them. It also examines the rapidly changing technologies, such as Big Data and automation, which have the potential to reinforce, as well as to challenge, the power of the largest firms. The Joy of X A Guided Tour of Math, from One to Infinity Houghton Mifflin Harcourt A comprehensive tour of leading mathematical ideas by an award-winning professor and columnist for the New York Times Opinionator series demonstrates how math intersects with philosophy, science and other aspects of everyday life. By the author of The Calculus of Friendship. 50,000 first printing. Trends in Computational Social Choice Lulu.com Statistical Analysis of Network Data with R Springer Networks have permeated everyday life through everyday realities like the Internet, social networks, and viral marketing. As such, network analysis is an important growth area in the quantitative sciences, with roots in social network analysis going back to the 1930s and graph theory going back centuries. Measurement and analysis are integral components of network research. As a result, statistical methods play a critical role in network analysis. This book is the first of its kind in network research. It can be used as a stand-alone resource in which multiple R packages are used to illustrate how to conduct a wide range of network analyses, from basic manipulation and visualization, to summary and characterization, to modeling of network data. The central package is igraph, which provides extensive capabilities for studying network graphs in R. This text builds on Eric D. Kolaczyk's book Statistical Analysis of Network Data (Springer, 2009). TCP/IP Illustrated Addison-Wesley Professional TCP/IP Illustrated, Volume 1, Second Edition, is a detailed and visual guide to today's TCP/IP protocol suite. Fully updated for the newest innovations, it demonstrates each protocol in action through realistic examples from modern Linux, Windows, and Mac OS environments. There's no better way to discover why TCP/IP works as it does, how it reacts to common conditions, and how to apply it in your own applications and networks. Building on the late W.

Richard Stevens' classic first edition, author Kevin R. Fall adds his cutting-edge experience as a leader in TCP/IP protocol research, updating the book to fully reflect the latest protocols and best practices. Graph-based Natural Language Processing and Information Retrieval Cambridge University Press Graph theory and the fields of natural language processing and information retrieval are well-studied disciplines. Traditionally, these areas have been perceived as distinct, with different algorithms, different applications and different potential end-users. However, recent research has shown that these disciplines are intimately connected, with a large variety of natural language processing and information retrieval applications finding efficient solutions within graph-theoretical frameworks. This book extensively covers the use of graph-based algorithms for natural language processing and information retrieval. It brings together topics as diverse as lexical semantics, text summarization, text mining, ontology construction, text classification and information retrieval, which are connected by the common underlying theme of the use of graph-theoretical methods for text and information processing tasks. Readers will come away with a firm understanding of the major methods and applications in natural language processing and information retrieval that rely on graph-based representations and algorithms. Pattern Discrimination Meson Press How do "human" prejudices reemerge in algorithmic cultures allegedly devised to be blind to them? How do "human" prejudices reemerge in algorithmic cultures allegedly devised to be blind to them? To answer this question, this book investigates a fundamental axiom in computer science: pattern discrimination. By imposing identity on input data, in order to filter--that is, to discriminate--signals from noise, patterns become a highly political issue. Algorithmic identity politics reinstate old forms of social segregation, such as class, race, and gender, through defaults and paradigmatic assumptions about the homophilic nature of connection. Instead of providing a more "objective" basis of decision making, machine-learning algorithms deepen bias and further inscribe inequality into media. Yet pattern discrimination is an essential part of human--and nonhuman--cognition. Bringing together media thinkers and artists from the United States and Germany, this volume asks the urgent questions: How can we discriminate without being discriminatory? How can we filter information out of data without reinserting racist, sexist, and classist beliefs? How can we queer homophilic tendencies within digital cultures? Introduction to Game Theory Springer Trading Against the Crowd Profiting from Fear and Greed in Stock, Futures and Options Markets John Wiley & Sons Efficient market theorists contend that markets are random and thus not predictable. With the publication of Trading Against theCrowd, however, noted author, economist, and professional trader John Summa convincingly shows that investor sentiment can be incorporated into profitable stock and stock market trading systems. In this groundbreaking book, Summa explains how to use popular gauges of crowd psychology, such as put/call ratios, option-implied volatility, short sales, investor surveys, and advisory opinion to trade against, or contrary to, prevailing market sentiment. He also makes compelling arguments against the efficient markets hypothesis with the presentation of his own quantitative weekly bear and bull news-flow intensity indices, which he builds from news scans. This data series, and other popular measures of crowd psychology, are processed through custom indicators that are programmed into profitable trading systems, such as Squeeze Play I & II, Tsunami Sentiment Wave, and the Fourth Estate. Trading Against the Crowd is the first book to provide a comprehensive assessment of investor crowd psychology, offering valuable market timing tools and trading techniques, including: MetaStock and Trade Station system and custom indicator code; comparative statistical studies of CBOE, OEX, and equity-only put/call ratios; straightforward instructions for combining price triggers with sentiment indicators; a practical guide to understanding put/call ratios, short sales, investor surveys, newsletter opinion, and stock market news-flow intensity; how to use LEAP options as trading vehicles to avoid use of stop loss orders; use of put/call ratios for trading the Treasury bond futures market; and test results and evaluation of trading system performance. Many of today's professional money managers rely on investor sentiment for improved market timing. They know that at extremes of market sentiment, markets tend to be the most predictable.Trading Against the Crowd shows how you can begin to profit from these short- to medium-term sentiment waves generated by the actions of the speculative crowd. Put into practice powerful sentiment data using thoroughly back-tested trading systems, and rise above the herd mentality of the investor crowd, where potentially large profits await. The Ethical Algorithm The Science of Socially Aware Algorithm Design Oxford University Press Over the course of a generation, algorithms have gone from mathematical abstractions to powerful mediators of daily life. Algorithms have made our lives more efficient, more entertaining, and, sometimes, better informed. At the same time, complex algorithms are increasingly violating the basic rights of individual citizens. Allegedly anonymized datasets routinely leak our most sensitive personal information; statistical models for everything from mortgages to college admissions reflect racial and gender bias. Meanwhile, users manipulate algorithms to "game" search engines, spam filters, online reviewing services, and navigation apps. Understanding and improving the science behind the algorithms that run our lives is rapidly becoming one of the most pressing issues of this century. Traditional fixes, such as laws, regulations and watchdog groups, have proven woefully inadequate. Reporting from the cutting edge of scientific research, The Ethical Algorithm offers a new approach: a set of principled solutions based on the emerging and exciting science of socially aware algorithm design. Michael Kearns and Aaron Roth explain how we can better embed human principles into machine code - without halting the advance of data-driven scientific exploration. Weaving together innovative research with stories of citizens, scientists, and activists on the front lines, The Ethical Algorithm offers a compelling vision for a future, one in which we can better protect humans from the unintended impacts of algorithms while continuing to inspire wondrous advances in technology. The Networked Nonprofit Connecting with Social Media to Drive Change John Wiley & Sons The Networked Nonprofit Connecting with Social Media to Drive Change This groundbreaking book shows nonprofits a new way of operating in our increasingly connected world: a networked approach enabled by social technologies, where connections are leveraged to increase impact in effective ways that drive change for the betterment of our society and planet. "The Networked Nonprofit is a must-read for any nonprofit organization seeking innovative, creative techniques to improve their mission and better serve their communities." —Diana Aviv, president and CEO, Independent Sector "The Internet means never having to ask permission before trying something new. In The Networked Nonprofit, Kanter and Fine show nonprofits how to harness this flexibility to pursue their missions in partnership with two billion connected citizens." —Clay Shirky, author, Here Comes Everybody: The Power of Organizing Without Organizations "The Networked Nonprofit uniquely describes the historical context and the current challenges that compel nonprofit leaders to work in networked ways and offers easy steps to help users exploit the potential of social media and 'working wikily."' —Stephanie McAuliffe, director, organizational effectiveness, The David and Lucile Packard Foundation "A must-read for nonprofit leaders who want to change their organizations from the inside out by embracing the power of social networks." —Charlene Li, founding partner, Altimeter Group; author, Open Leadership; and coauthor, Groundswell "This is a perfect handbook for anyone who wants to leapfrog their current limitations of understanding and find real-world applications of technology to extend their mission." —Michele Nunn, CEO, Points of Light Institute, and cofounder, HandsOn Network "Kanter and Fine provide the 'Google Maps' for nonprofits to harness social media to kick butt and change the world." —Guy Kawasaki, cofounder, Alltop.com, and former chief evangelist, Apple Inc. "URGENT! Read this book. Take notes. Take action. If you work for a nonprofit, you don't have to do every single thing these seasoned authors have to share, but you certainly have to know what you're missing." —Seth Godin Register at www.josseybass.com/emailfor more information on our publications, authors, and to receive special offers. Handbook of Social Economics SET: 1A, 1B Newnes How can economists define and measure social preferences and interactions? Through the use of new economic data and tools, our contributors survey an array of social interactions and decisions that typify homo economicus. Identifying economic strains in activities such as learning, group formation, discrimination, and the creation of peer dynamics, they demonstrate how they tease out social preferences from the influences of culture, familial beliefs, religion, and other forces. Advances our understanding about quantifying social interactions and the effects of culture Summarizes research on theoretical and applied economic analyses of social preferences Explores the recent willingness among economists to consider new arguments in the utility function Lectures on Network Systems Createspace Independent Publishing Platform These lecture notes provide a mathematical introduction to multi-agent dynamical systems, including their analysis via algebraic graph theory and their application to engineering design problems. The focus is on fundamental dynamical phenomena over interconnected network systems, including consensus and disagreement in averaging systems, stable equilibria in compartmental flow networks, and synchronization in coupled oscillators and networked control systems. The theoretical results are complemented by numerous examples arising from the analysis of physical and natural systems and from the design of network estimation, control, and optimization systems. Evolution and the Theory of Games Cambridge University Press This 1982 book is an account of an alternative way of thinking about evolution and the theory of games.