Networks Crowds And Markets Reasoning About A Highly Connected World Solution Manual

Many complex systems in civil and military operations are highly automated with the intention of supporting human performance in difficult cognitive tasks. The complex systems can involve teams or individuals working on real-time supervisory control, command or information management tasks where a number of constraints must be satisfied. Decision Making in Complex Environments addresses the role of the human, the technology and the processes in complex socio-technical and technological systems. The aim of the book is to apply a multi-disciplinary perspective to the examination of the human factors in complex decision making. It contains more than 30 contributions on key subjects such as military human factors, team decision making issues, situation awareness, and technology support. In addition to the major application area of military human factors there are chapters on business, medical, governmental and aeronautical decision making. The book provides a unique blend of expertise from psychology, human factors, industry, commercial environments, the military, computer science, organizational psychology and training that should be valuable to academics and practitioners alike.

Social network analysis applications have experienced tremendous advances within the last few years due in part to increasing trends towards users interacting with each other on the internet. Social networks are organized as graphs, and the data on social networks takes on the form of massive streams, which are mined for a variety of purposes. Social Network Data Analytics covers an important niche in the social network analytics field. This edited volume, contributed by prominent researchers in this field, presents a wide selection of topics on social network data mining such as Structural Properties of Social Networks, Algorithms for Structural Discovery of Social Networks and Content Analysis in Social Networks. This book is also unique in focussing on the data analytical aspects of social networks in the internet scenario, rather than the traditional sociology-driven emphasis prevalent in the existing books, which do not focus on the unique data-intensive characteristics of online social networks. Emphasis is placed on simplifying the content so that students and practitioners benefit from this book. This book targets advanced level students and researchers concentrating on computer science as a secondary text or reference book. Data mining, database, information security, electronic commerce and machine learning professionals will find this book a valuable asset, as well as primary associations such as ACM, IEEE and Management Science.

In recent years there has been an explosion of network data – that is, measu- ments that are either of or from a system conceptualized as a network – from se- ingly all corners of science. The combination of an increasingly pervasive interest in scienti c analysis at a systems level and the ever-growing capabilities for hi- throughput data collection in various elds has fueled this trend. Researchers from biology and bioinformatics to physics, from computer science to the information sciences, and from economics to sociology are more and more engaged in the c- lection and statistical analysis of data from a network-centric perspective. Accordingly, the contributions to statistical methods and modeling in this area have come from a similarly broad spectrum of areas, often independently of each other. Many books already have been written addressing network data and network problems in speci c individual disciplines. However, there is at present no single book that provides a modern treatment of a core body of knowledge for statistical analysis of network data that cuts across the various disciplines and is organized rather according to a statistical taxonomy of tasks and techniques. This book seeks to ll that gap and, as such, it aims to contribute to a growing trend in recent years to facilitate the exchange of knowledge across the pre-existing boundaries between those disciplines that play a role in what is coming to be called 'network science.

What does the Web look like? How can we find patterns, communities, outliers, in a social network? Which are the most central nodes in a network? These are the questions that motivate this work. Networks and graphs appear in many diverse settings, for example in social networks, computer-communication networks (intrusion detection, traffic management), protein-protein interaction networks in biology, document-text bipartite graphs in text retrieval, person-account graphs in financial fraud detection, and others. In this work, first we list several surprising patterns that real graphs tend to follow. Then we give a detailed list of generators that try to mirror these patterns. Generators are important, because they can help with "what if" scenarios, extrapolations, and anonymization. Then we provide a list of powerful tools for graph analysis, and specifically spectral methods (Singular Value Decomposition (SVD)), tensors, and case studies like the famous "pageRank" algorithm and the "HITS" algorithm for ranking web search results. Finally, we conclude with a survey of tools and observations from related fields like sociology, which provide complementary viewpoints. Table of Contents: Introduction / Patterns in Static Graphs / Patterns in Evolving Graphs / Patterns in Weighted Graphs / Discussion: The Structure of Specific Graphs / Discussion: Power Laws and Deviations / Summary of Patterns / Graph Generators / Preferential Attachment and Variants / Incorporating Geographical Information / The RMat / Graph Generation by Kronecker Multiplication / Summary and Practitioner's Guide / SVD, Random Walks, and Tensors / Tensors / Community Detection / Influence/Virus Propagation and Immunization / Case Studies / Social Networks / Other Related Work / Conclusions

Complex Graphs and Networks

Computational Network Science

Algorithms and Models for Network Data and Link Analysis

Biplots in Practice

Graph Machine Learning

Mining, Visualization, and Security

14th Asia-Pacific Web Conference, APWeb 2012, Kunming, China, April 11-13, Proceedings

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.

Through examples of large complex graphs in realistic networks, research in graph theory has been forging ahead into exciting new directions. Graph theory has emerged as a primary tool for detecting numerous hidden structures in various information networks, including Internet graphs, social networks, biological networks, or, more generally, any graph representing relations in massive data sets. How will we explain from first principles the universal and ubiquitous coherence in the structure of these realistic but complex networks? In order to analyze these large sparse graphs, we use combinatorial, probabilistic, and spectral methods, as well as new and improved tools to analyze these networks. The examples of these networks have led us to focus on new, general, and powerful ways to look at graph theory. The book, based on lectures given at the CBMS Workshop on the Combinatorics of Large Sparse Graphs, presents new perspectives in graph theory and helps to contribute to a sound scientific foundation for our understanding of discrete networks that permeate this information age.

This book constitutes the refereed proceedings of the 14th Asia-Pacific Conference APWeb 2012 held in Kunming, China, in April 2012. The 39 full papers presented together with 34 short papers, 2 keynote talks, and 5 demo papers were carefully reviewed and selected from 167 initial submissions. The papers cover contemporary topics in the fields of Web management and World Wide Web related research and applications, such as advanced application of databases, cloud computing, content management, data mining and knowledge discovery, distributed and parallel processing, grid computing, internet of things, semantic Web and Web ontology, security, privacy and trust, sensor networks, service-oriented computing, Web community analysis, Web mining and social networks.

The emerging field of network science represents a new style of research that can unify such traditionally-diverse fields as sociology, economics, physics, biology, and computer science. It is a powerful tool in analyzing both natural and man-made systems, using the relationships between players within these networks and between the networks themselves to gain insight into the nature of each field. Until now, studies in network science have been focused on particular relationships that require varied and sometimes-incompatible datasets, which has kept it from being a truly universal discipline. Computational Network Science seeks to unify the methods used to analyze these diverse fields. This book provides an introduction to the field of Network Science and provides the groundwork for a computational, algorithm-based approach to network and system analysis in a new and important way. This new approach would remove the need for tedious human-based analysis of different datasets and help researchers spend more time on the qualitative aspects of network science research. Demystifies media hype regarding Network Science and serves as a fast-paced introduction to state-of-the-art concepts and systems related to network science Comprehensive coverage of Network Science algorithms, methodologies, and common problems Includes references to formative and updated developments in the field Coverage spans mathematical sociology, economics, political science, and biological networks

A Mathematical Exploration

Recognize - Construct - Visualize - Analyze - Interpret

Trading Against the Crowd

Organizations and Organizing

Statistical Analysis of Network Data

Probability, Choice, and Reason

An Introduction

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.

Network data are produced automatically by everyday interactions - social networks, power grids, and links between data sets are a few examples. Such data capture social and economic behavior in a form that can be analyzed using powerful computational tools. This book is a guide to both basic and advanced techniques and algorithms for extracting useful information from network data. The content is organized around 'tasks', grouping the algorithms needed to gather specific types of information and thus answer specific types of questions. Examples include similarity between nodes in a network, prestige or centrality of individual nodes, and dense regions or communities in a network. Algorithms are derived in detail and summarized in pseudo-code. The book is intended primarily for computer scientists, engineers, statisticians and physicists, but it is also accessible to network scientists based in the social sciences. MATLAB®/Octave code illustrating some of the algorithms will be available at: http://www.cambridge.org/9781107125773.

A comprehensive introduction to machine learning that uses probabilistic models and inference as a unifying approach. Today's Web-enabled deluge of electronic data calls for automated methods of data analysis. Machine learning provides these, developing methods that can automatically detect patterns in data and then use the uncovered patterns to predict future data. This textbook offers a comprehensive and self-contained introduction to the field of machine learning, based on a unified, probabilistic approach. The coverage combines breadth and depth, offering necessary background material on such topics as probability, optimization, and linear algebra as well as discussion of recent developments in the field, including conditional random fields, L1 regularization, and deep learning. The book is written in an informal, accessible style, complete with pseudo-code for the most important algorithms. All topics are copiously illustrated with color images and worked examples drawn from such application domains as biology, text processing, computer vision, and robotics. Rather than providing a cookbook of different heuristic methods, the book stresses a principled model-based approach, often using the language of graphical models to specify models in a concise and intuitive way. Almost all the models described have been implemented in a MATLAB software package—PMTK (probabilistic modeling toolkit)—that is freely available online. The book is suitable for upper-level undergraduates with an introductory-level college math background and beginning graduate students.

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.

Social Network Data Analytics

Decision Making in Complex Environments

Profiting from Fear and Greed in Stock, Futures and Options Markets

Laws, Tools, and Case Studies

Game-theoretic Models and Reasoning

What Money Can't Buy

Lorcan Dempsey on Libraries, Services and Networks

Manipulate and analyze network data with the power of Python and NetworkX Key FeaturesUnderstand the terminology and basic concepts of network scienceLeverage the power of Python and NetworkX to represent data as a networkApply common techniques for working with network data of varying sizesBook Description NetworkX is a leading free and open source package used for network science with the Python programming language. NetworkX can track properties of individuals and relationships, find communities, analyze resilience, detect key network locations, and perform a wide range of important tasks. With the recent release of version 2, NetworkX has been updated to be more powerful and easy to use. If you're a data scientist, engineer, or computational social scientist, this book will guide you in using the Python programming language to gain insights into real-world networks. Starting with the fundamentals, you'll be introduced to the core concepts of network science, along with examples that use real-world data and Python code. This book will introduce you to theoretical concepts such as scale-free and small-world networks, centrality measures, and agent-based modeling. You'll also be able to look for scale-free networks in real data and visualize a network using circular, directed, and shell layouts. By the end of this book, you'll be able to choose appropriate network representations, use NetworkX to build and characterize networks, and uncover insights while working with real-world systems. What you will learnUse Python and NetworkX to analyze the properties of individuals and relationshipsEncode data in network nodes and edges using NetworkXManipulate, store, and summarize data in network nodes and edgesVisualize a network using circular, directed and shell layoutsFind out how simulating behavior on networks can give insights into real-world problemsUnderstand the ongoing impact of network science on society, and its ethical considerationsWho this book is for If you are a programmer or data scientist who wants to manipulate and analyze network data in Python, this book is perfect for you. Although prior knowledge of network science is not necessary, some Python programming experience will help you understand the concepts covered in the book easily.

This classroom-tested text is the definitive introduction to the mathematics of network science, featuring examples and numerous exercises.

The past decade has witnessed the emergence of participatory Web and social media, bringing people together in many creative ways. Millions of users are playing, tagging, working, and socializing online, demonstrating new forms of collaboration, communication, and intelligence that were hardly imaginable just a short time ago. Social media also helps reshape business models, sway opinions and emotions, and opens up numerous possibilities to study human interaction and collective behavior in an unparalleled scale. This lecture, from a data mining perspective, introduces characteristics of social media, reviews representative tasks of computing with social media, and illustrates associated challenges. It introduces basic concepts, presents state-of-the-art algorithms with easy-to-understand examples, and recommends effective evaluation methods. In particular, we discuss graph-based community detection techniques and many important extensions that handle dynamic, heterogeneous networks in social media. We also demonstrate how discovered patterns of communities can be used for social media mining. The concepts, algorithms, and methods presented in this lecture can help harness the power of social media and support building socially-intelligent systems. This book is an accessible introduction to the study of \emph{community detection and mining in social media}. It is an essential reading for students, researchers, and practitioners in disciplines and applications where social media is a key source of data that piques our curiosity to understand, manage, innovate, and excel. This book is supported by additional materials, including lecture slides, the complete set of figures, key references, some toy data sets used in the book, and the source code of representative algorithms. The readers are encouraged to visit the book website for the latest information. Table of Contents: Social Media and Social Computing / Nodes, Ties, and Influence / Community Detection and Evaluation / Communities in Heterogeneous Networks / Social Media Mining

This book constitutes the thoroughly refereed post-conference proceedings of the 17th International Conference on Financial Cryptography and Data Security (FC 2013), held at Bankoku Shinryokan Busena Terrace Beach Resort, Okinawa, Japan, April 1-5, 2013. The 14 revised full papers and 17 short papers were carefully selected and reviewed from 125 submissions. The papers are grouped in the following topical sections: electronic payment (Bitcoin), usability aspects, secure computation, passwords, privacy primitives and non-repudiation, anonymity, hardware security, secure computation and secret sharing, authentication attacks and countermeasures, privacy of data and communication, and private data retrieval.

Studyguide for Networks, Crowds, and Markets

Machine Learning

Reasoning about a Highly Connected World

Financial Cryptography and Data Security

Explore and visualize network data effectively

Complex Network Analysis in Python

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.

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 economic crisis is also a crisis for economic theory. Most analyses of the evolution of the crisis invoke three themes, contagion, networks and trust, yet none of these play a major role in standard macroeconomic models. What is needed is a theory in which these aspects are central. The direct interaction between individuals, firms and banks does not simply produce imperfections in the functioning of the economy but is the very basis of the functioning of a modern economy. This book suggests a way of analysing the economy which takes this point of view. The economy should be considered as a complex adaptive system in which the agents constantly react to, influence and are influenced by, the other individuals in the economy. In such systems which are familiar from statistical physics and biology for example, the behaviour of the aggregate cannot be deduced from the behaviour of the average, or "representative" individual. Just as the organised activity of an ants' nest cannot be understood from the behaviour of a "representative ant" so macroeconomic phenomena should not be assimilated to those associated with the "representative agent". This book provides examples where this can clearly be seen. The examples range from Schelling's model of segregation, to contributions to public goods, the evolution of buyer seller relations in fish markets, to financial models based on the foraging behaviour of ants. The message of the book is that coordination rather than efficiency is the central problem in economics. How do the myriads of individual choices and decisions come to be coordinated? How does the economy or a market, "self organise" and how does this sometimes result in major upheavals, or to use the phrase from physics, "phase transitions"? The sort of system described in this book is not in equilibrium in the standard sense, it is constantly changing and moving from state to state and its very structure is always being modified. The economy is not a ship sailing on a well-defined trajectory which occasionally gets knocked off course. It is more like the slime described in the book "emergence", constantly reorganising itself so as to slide collectively in directions which are neither

understood nor necessarily desired by its components.

The scientific study of networks, including computer networks, social networks, and biological networks, has received an enormous amount of interest in the last few years. The rise of the Internet and the wide availability of inexpensive computers have made it possible to gather and analyze network data on a large scale, and the development of a variety of new theoretical tools has allowed us to extract new knowledge from many different kinds of networks. The study of networks is broadly interdisciplinary and important developments have occurred in many fields, including mathematics, physics, computer and information sciences, biology, and the social sciences. This book brings together for the first time the most important breakthroughs in each of these fields and presents them in a coherent fashion, highlighting the strong interconnections between work in different areas. Subjects covered include the measurement and structure of networks in many branches of science, methods for analyzing network data, including methods developed in physics, statistics, and sociology, the fundamentals of graph theory, computer algorithms, and spectral methods, mathematical models of networks, including random graph models and generative models, and theories of dynamical processes taking place on networks.

Graph Mining

A First Course in Network Science

Networks, Crowds, and Markets China Edition

Methods and Models

Networks, Crowds, and Markets

High-frequency Trading

How Your Social Position Determines Your Power, Beliefs, and Behaviors

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.

Discover how graph databases can help you manage and query highly connected data. With this practical book, you'll learn how to design and implement a graph database that brings the power of graphs to bear on a broad range of problem domains. Whether you want to speed up your response to user queries or build a database that can adapt as your business evolves, this book shows you how to apply the schema-free graph model to real-world problems. Learn how different organizations are using graph databases to outperform their competitors. With this book's data modeling, query, and code examples, you'll quickly be able to implement your own solution. Model data with the Cypher query language and property graph model Learn best practices and common pitfalls when modeling with graphs Plan and implement a graph database solution in test-driven fashion Explore real-world examples to learn how and why organizations use a graph database Understand common patterns and components of graph database architecture Use analytical techniques and algorithms to mine graph database information

With the proliferation of social media and on-line communities in networked world a large gamut of data has been collected and stored in databases. The rate at which such data is stored is growing at a phenomenal rate and pushing the classical methods of data analysis to their limits. This book presents an integrated framework of recent empirical and theoretical research on social network analysis based on a wide range of techniques from various disciplines like data mining, social sciences, mathematics, statistics, physics, network science, machine learning with visualization techniques and security. The book illustrates the potential of multi-disciplinary techniques in various real life problems and intends to motivate researchers in social network analysis to design more effective tools by integrating swarm intelligence and data mining.

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.

Symmetry

17th International Conference, FC 2013, Okinawa, Japan, April 1-5, 2013, Revised Selected Papers

Random Graphs and Complex Networks

The Politics of Free Markets

The Moral Limits of Markets

Community Detection and Mining in Social Media

Take graph data to the next level by applying machine learning techniques and algorithms

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.

A practical introduction to network science for students across business, cognitive science, neuroscience, sociology, biology, engineering and other disciplines.

Build machine learning algorithms using graph data and efficiently exploit topological information within your models Key FeaturesImplement machine learning techniques and algorithms in graph dataIdentify the relationship between nodes in order to make better business decisionsApply graph-based machine learning methods to solve real-life problemsBook Description Graph Machine Learning will introduce you to a set of tools used for processing network data and leveraging the power of the relation between entities that can be used for predictive, modeling, and analytics tasks. The first chapters will introduce you to graph theory and graph machine learning, as well as the scope of their potential use. You'll then learn all you need to know about the main machine learning models for graph representation learning: their purpose, how they work, and how they can be implemented in a wide range of supervised and unsupervised learning applications. You'll build a complete machine learning pipeline, including data processing, model training, and prediction in order to exploit the full potential of graph data. After covering the basics, you'll be taken through real-world scenarios such as extracting data from social networks, text analytics, and natural language processing (NLP) using graphs and financial transaction systems on graphs. You'll also learn how to build and scale out data-driven applications for graph analytics to store, query, and process network information, and explore the latest trends on graphs. By the end of this machine learning book, you will have learned essential concepts of graph theory and all the algorithms and techniques used to build successful machine learning applications. What you will learnWrite Python scripts to extract features from graphsDistinguish between the main graph representation learning techniquesLearn how to extract data from social networks, financial transaction systems, for text analysis, and moreImplement the main unsupervised and supervised graph embedding techniquesGet to grips with shallow embedding methods, graph neural networks, graph regularization methods, and moreDeploy and scale out your application seamlesslyWho this book is for This book is for data scientists, data analysts, graph analysts, and graph professionals who want to leverage the information embedded in the connections and relations between data points to boost their analysis and model performance using machine learning. A beginner-level understanding of graph databases and graph data is required, alongside a solid understanding of ML basics. You'll also need intermediate-level Python programming knowledge to get started with this book.

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.

Network Science with Python and NetworkX Quick Start Guide

Society and Economy

Social and Economic Networks

Graph Databases

Reasoning About a Highly Connected World

Social Networking

Introduction to Game Theory

In France and West Germany, where tax structures were more regressive, industrial policy more pro-growth, and welfare states universal and even reverse-redistributive, neoliberalism could not be anchored in electoral dissatisfaction, and therefore it stalled.The attempt to reduce the role of the state in the market through tax cuts, decreases in social spending, deregulation, and privatization - "neoliberalism" - took firm root in the United States under Ronald Reagan and in Britain under Margaret Thatcher. But why did neoliberal policies gain such prominence in these two countries and not in similarly industrialized Western countries such as France and Germany? A comparative-historical analysis of the development of neoliberal politics in these four countries, "The Politics of Free Markets" argues that neoliberalism was made possible in the United States and Britain not because the Left in these countries was too weak, but because it was in many respects too strong. At the time of the oil crisis in the 1970s, American and British tax policies were more progressive, their industrial policy more adversarial to business, and their welfare states more redistributive than those of France and West Germany. Monica Prasad shows that these adversarial structures created opportunities for politicians to find and mobilize dissatisfaction with the status quo.Gives a comparative-historical analysis of the development of neoliberal politics in different countries. This book argues that neoliberalism was made possible in the United States and Britain not because the Left in these countries was too weak, but because it was in many respects too strong.

Never HIGHLIGHT a Book Again Includes all testable terms, concepts, persons, places, and events. Cram101 Just the FACTS101 studyguides gives all of the outlines, highlights, and quizzes for your textbook with optional online comprehensive practice tests. Only Cram101 is Textbook Specific. Accompanies: 9780872893795. This item is printed on demand.

Networks, Crowds, and MarketsReasoning About a Highly Connected WorldCambridge University Press

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.

Complex Economics

The Network Reshapes the Library

Reasoning about a Highly Connected World by Easley, David

A Course in Networks and Markets

Introduction to High Performance Computing for Scientists and Engineers

The Rise of Neoliberal Economic Policies in Britain, France, Germany, and the United States

The Human Network

Networks of relationships help determine the careers that people choose, the jobs they obtain, the products they buy, and how they vote. The many aspects of our lives that are governed by social networks make it critical to understand how they impact behavior, which network structures are likely to emerge in a society, and why we organize ourselves as we do. In Social and Economic Networks, Matthew Jackson offers a comprehensive introduction to social and economic networks, drawing on the latest findings in economics, sociology, computer science, physics, and mathematics. He provides empirical background on networks and the regularities that they exhibit, and discusses random graph-based models and strategic models of network formation. He helps readers to understand behavior in networked societies, with a detailed analysis of learning and diffusion in networks, decision making by individuals who are influenced by their social neighbors, game theory and markets on networks, and a host of related subjects. Jackson also describes the varied statistical and modeling techniques used to analyze social networks. Each chapter includes exercises to aid students in their analysis of how networks function. This book is an indispensable resource for students and researchers in economics, mathematics, physics, sociology, and business.

Here is a fresh, intriguing, and, above all, authoritative book about how our sometimes hidden positions in various social structures—our human networks—shape how we think and behave, and inform our very outlook on life. Inequality, social immobility, and political polarization are only a few crucial phenomena driven by the inevitability of social structures. Social structures determine who has power and influence, account for why people fail to assimilate basic facts, and enlarge our understanding of patterns of contagion—from the spread of disease to financial crises. Despite their primary role in shaping our lives, human networks are often overlooked when we try to account for our most important political and economic practices. Matthew O. Jackson brilliantly illuminates the complexity of the social networks in which we are—often unwittingly—positioned and aims to facilitate a deeper appreciation of why we are who we are. Ranging across disciplines—psychology, behavioral economics, sociology, and business—and rich with historical analogies and anecdotes, The Human Network provides a galvanizing account of what can drive success or failure in life.

Should we pay children to read books or to get good grades? Should we allow corporations to pay for the right to pollute the atmosphere? Is it ethical to pay people to test risky new drugs or to donate their organs? What about hiring mercenaries to fight our wars? Auctioning admission to elite universities? Selling citizenship to immigrants willing to pay? In What Money Can't Buy, Michael J. Sandel takes on one of the biggest ethical questions of our time: Is there something wrong with a world in which everything is for sale? If so, how can we prevent market values from reaching into spheres of life where they don't belong? What are the moral limits of markets? In recent decades, market values have crowded out nonmarket norms in almost every aspect of life—medicine, education, government, law, art, sports, even family life and personal relations. Without quite realizing it, Sandel argues, we have drifted from having a market economy to being a market society. Is this where we want to be?In his New York Times bestseller Justice, Sandel showed himself to be a master at illuminating, with clarity and verve, the hard moral questions we confront in our everyday lives. Now, in What Money Can't Buy, he provokes an essential discussion that we, in our market-driven age, need to have: What is the proper role of markets in a democratic society—and how can we protect the moral and civic goods that markets don't honor and that money can't buy?

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.

Rational, Natural and Open Systems Perspectives

Web Technologies and Applications

A Probabilistic Perspective

An Algorithmic Approach

Individual and Collective Rationality

Mastering Gephi Network Visualization

Networks