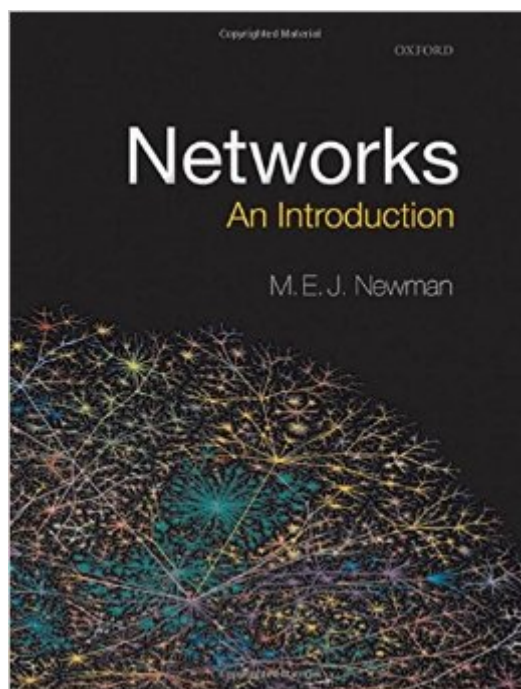# Networks: An Introduction

Synopsis

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.To request a copy of the Solutions Manual, visit: http://global.oup.com/uk/academic/physics/admin/solutions

Book Information

Hardcover: 720 pages

Publisher: Oxford University Press; 1 edition (May 20, 2010)

Language: English

ISBN-10: 0199206651

ISBN-13: 978-0199206650

Product Dimensions: 9.8 x 1.7 x 7.6 inches

Shipping Weight: 4.1 pounds (View shipping rates and policies)

Average Customer Review: 4.1 out of 5 starsÂ Â See all reviewsÂ (22 customer reviews)

Best Sellers Rank: #163,694 in Books (See Top 100 in Books)   #43 inÂ Books > Science & Math > Physics > System Theory   #466 inÂ Books > Textbooks > Science & Mathematics > Physics #43302 inÂ Books > Reference

Customer Reviews

The study of networks received much interest in recent years. This book provides an easy to read introduction covering many important topics. Hence its primary audience is probably for undergraduate students however it can serve also as reference.In particular I like that the book

focuses on many recent methods, e.g., community structures or complex network models, without forgetting past concept that have been developed either in graph theory or come from interdisciplinary research for instance from studying social networks. Also, it discusses network algorithms because only by means of these methods you can study the introduced concepts and methods numerically.Mathematicians interested in graph theory will probably not like this book because it is not written in a typical math-style. In addition, the topic of the book is on network theory which is not exactly graph theory but comprises wider concepts (theoretically and practically).Besides mathematician, probably everyone will like it.I want to remark that this book is not merely a collection of published papers, but it is written as a textbook. This why the individual parts fit well to each other.

I use network analysis in ecological research. I have found most reference books either highly technical or so simplistic as to be of of little use. This new book is the exception. It is quite well-written, and covers much recent applied research that uses network theory, as well as the analytical and computational background behind these applications. As well as being a good textbook, it is a great introduction to the topic for quantitative researchers in other fields that wish to apply network analysis to their work, and because it is up-to-date, I will continue to use it as a reference in the future.

Networks by M. E. J. Newman is just invaluable for anyone working in the field of network related phenomena. I have already read through Chapter 11, and I have found both improvements in algorithms I had already implemented, and new methods that I didn't know about at all. I am only sorry that it took two years for me to discover this book!

The content of the book is excellent and is worth 5 stars, but the kindle version is quite poor. For some reason, in the kindle version, the formulas are so small that they are barely readable. How disappointing! The publisher should seriously consider adjusting the formulas.By the way, the index does not work: the phrases in the index sections are not links and they don't come with page number. They are just words.

If you are a layman of network study and want to learn about it in a quantitative way, this is a wonderful book to start from. If you do work on networks, you probably already have this book, for it serves as an excellent reference too. This book gives a comprehensive and rigorous introduction to

the core concepts of networks (vertex, edge, degree, centrality, component, path, etc.) and classical algorithms to do computations. Prof. Newman's writing style is extremely clear. There are no logic gaps between sentences. Whenever you find something unclear or confusing during reading, you will find an explanation in the following paragraphs.

Great reference with clearly developed examples.The layout made it enjoyable to read.The math is very digestable for anyone at a slightly post Calc level.(although clearly Calc is not needed)Combine this with a bit of "R" code and you can actually build projects in the area.

Excellent introduction to graph theory from an expert in the field. Although I have access to this book at the library, I wanted a hard copy to keep as a reference on my desk because I

The book is **excellent** but I regret I purchased the kindle version.The mathematical expressions are too small to be readable in Kindle.I hope that or the editorial will solve this issue !

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