



Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery)

Nicola Barbieri, Giuseppe Manco, Ettore Ritacco

[Download now](#)

[Read Online](#) 

Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery)

Nicola Barbieri, Giuseppe Manco, Ettore Ritacco

Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) Nicola Barbieri, Giuseppe Manco, Ettore Ritacco

The importance of accurate recommender systems has been widely recognized by academia and industry, and recommendation is rapidly becoming one of the most successful applications of data mining and machine learning. Understanding and predicting the choices and preferences of users is a challenging task: real-world scenarios involve users behaving in complex situations, where prior beliefs, specific tendencies, and reciprocal influences jointly contribute to determining the preferences of users toward huge amounts of information, services, and products. Probabilistic modeling represents a robust formal mathematical framework to model these assumptions and study their effects in the recommendation process.

This book starts with a brief summary of the recommendation problem and its challenges and a review of some widely used techniques. Next, we introduce and discuss probabilistic approaches for modeling preference data. We focus our attention on methods based on latent factors, such as mixture models, probabilistic matrix factorization, and topic models, for explicit and implicit preference data. These methods represent a significant advance in the research and technology of recommendation. The resulting models allow us to identify complex patterns in preference data, which can be exploited to predict future purchases effectively.

The extreme sparsity of preference data poses serious challenges to the modeling of user preferences, especially in the cases where few observations are available. Bayesian inference techniques elegantly address the need for regularization, and their integration with latent factor modeling helps to boost the performances of the basic techniques.

We summarize the strengths and weakness of several approaches by considering two different but related evaluation perspectives, namely, rating prediction and recommendation accuracy. Furthermore, we describe how probabilistic methods based on latent factors enable the exploitation of preference patterns in novel applications beyond rating prediction or recommendation accuracy.

We finally discuss the application of probabilistic techniques in two additional scenarios, characterized by the availability of side information besides preference data. In summary, the book categorizes the myriad probabilistic approaches to recommendations and provides guidelines for their adoption in real-world situations.

Table of Contents: Preface / The Recommendation Process / Probabilistic Models for Collaborative Filtering / Bayesian Modeling / Exploiting Probabilistic Models / Contextual Information / Social Recommender Systems / Conclusions / Bibliography / Authors' Biographies

 [Download Probabilistic Approaches to Recommendations \(Synthesis ...pdf](#)

 [Read Online Probabilistic Approaches to Recommendations \(Synthesi ...pdf](#)



Download and Read Free Online Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) Nicola Barbieri, Giuseppe Manco, Ettore Ritacco

Download and Read Free Online Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) Nicola Barbieri, Giuseppe Manco, Ettore Ritacco

From reader reviews:

Michelle Fulk:

This Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) book is absolutely not ordinary book, you have after that it the world is in your hands. The benefit you will get by reading this book is information inside this publication incredible fresh, you will get data which is getting deeper you actually read a lot of information you will get. This kind of Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) without we comprehend teach the one who reading it become critical in thinking and analyzing. Don't always be worry Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) can bring once you are and not make your carrier space or bookshelves' come to be full because you can have it within your lovely laptop even cell phone. This Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) having excellent arrangement in word as well as layout, so you will not feel uninterested in reading.

Wilbert York:

This Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) is great e-book for you because the content that is full of information for you who have always deal with world and have to make decision every minute. That book reveal it info accurately using great manage word or we can state no rambling sentences within it. So if you are read this hurriedly you can have whole details in it. Doesn't mean it only will give you straight forward sentences but tough core information with lovely delivering sentences. Having Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) in your hand like obtaining the world in your arm, details in it is not ridiculous just one. We can say that no book that offer you world within ten or fifteen minute right but this publication already do that. So , it is good reading book. Hey Mr. and Mrs. stressful do you still doubt which?

Dennis Green:

Is it you actually who having spare time after that spend it whole day simply by watching television programs or just resting on the bed? Do you need something totally new? This Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) can be the response, oh how comes? The new book you know. You are and so out of date, spending your spare time by reading in this completely new era is common not a geek activity. So what these ebooks have than the others?

Henry Buford:

That publication can make you to feel relax. This book Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) was bright colored and of course has pictures on the website. As we know that book Probabilistic Approaches to Recommendations (Synthesis

Lectures on Data Mining and Knowledge Discovery) has many kinds or genre. Start from kids until young adults. For example Naruto or Detective Conan you can read and feel that you are the character on there. Therefore not at all of book tend to be make you bored, any it makes you feel happy, fun and chill out. Try to choose the best book to suit your needs and try to like reading that will.

**Download and Read Online Probabilistic Approaches to
Recommendations (Synthesis Lectures on Data Mining and
Knowledge Discovery) Nicola Barbieri, Giuseppe Manco, Ettore
Ritacco #R1CFM6BOIS3**

Read Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) by Nicola Barbieri, Giuseppe Manco, Ettore Ritacco for online ebook

Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) by Nicola Barbieri, Giuseppe Manco, Ettore Ritacco Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) by Nicola Barbieri, Giuseppe Manco, Ettore Ritacco books to read online.

Online Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) by Nicola Barbieri, Giuseppe Manco, Ettore Ritacco ebook PDF download

Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) by Nicola Barbieri, Giuseppe Manco, Ettore Ritacco Doc

Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) by Nicola Barbieri, Giuseppe Manco, Ettore Ritacco Mobipocket

Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) by Nicola Barbieri, Giuseppe Manco, Ettore Ritacco EPub

Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) by Nicola Barbieri, Giuseppe Manco, Ettore Ritacco Ebook online

Probabilistic Approaches to Recommendations (Synthesis Lectures on Data Mining and Knowledge Discovery) by Nicola Barbieri, Giuseppe Manco, Ettore Ritacco Ebook PDF