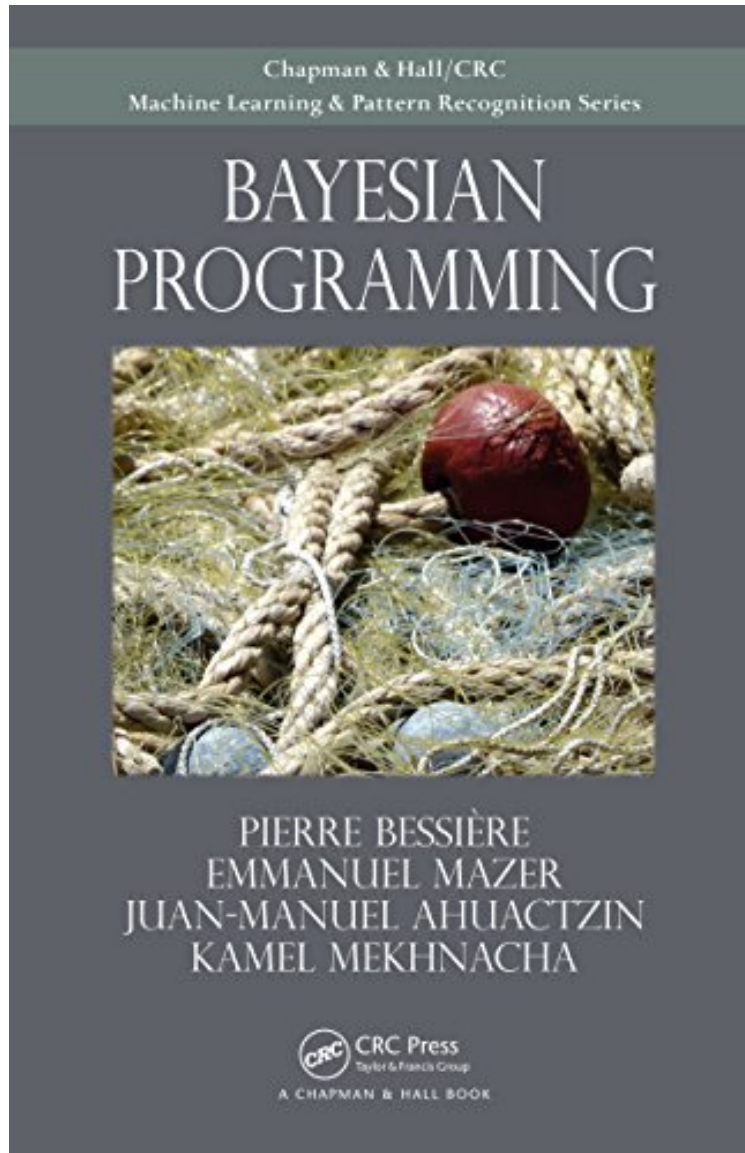


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Bayesian Programming (Chapman Hall/CRC Machine Learning Pattern Recognition)

Pierre Bessiere, Emmanuel Mazer, Juan Manuel Ahuactzin, Kamel Mekhnacha
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Pierre Bessiere, Emmanuel Mazer, Juan Manuel Ahuactzin, Kamel Mekhnacha : Bayesian Programming (Chapman Hall/CRC Machine Learning Pattern Recognition) before purchasing it in order to gage whether or not it would be worth my time, and all praised Bayesian Programming (Chapman Hall/CRC Machine Learning Pattern Recognition):

0 of 0 people found the following review helpful. Many examples, good bookBy AlekseyA good book on subject with

real world examples. Introducing a formalism for problem solving using bayesian formulas, sometimes a bit over-complicated. 2 of 2 people found the following review helpful. Foundational By Snapple Based mostly on ET Jaynes seminal book, this book translates probabilistic reasoning into a framework for solving any kind of real world problem.. It brings together the various Bayesian models (Bayesian networks, Markov decision processes, Bayesian filters etc) used in practice under a common framework. Within which it is easy to change or create completely new models. A unifying practitioner's guide to the Bayesian approach. The only minor downside can be found in the English writing: on occasion, sentence construction is a bit unusual. 3 of 4 people found the following review helpful. I love the exposition of the Bayesian approach taken by the ... By Ravenwater I wanted to learn more about Bayesian programming to apply to continuous learning problems. I love the exposition of the Bayesian approach taken by the authors. I have found the prose to be easy to read, and the examples perfectly progressive.

Probability as an Alternative to Boolean Logic While logic is the mathematical foundation of rational reasoning and the fundamental principle of computing, it is restricted to problems where information is both complete and certain. However, many real-world problems, from financial investments to email filtering, are incomplete or uncertain in nature. Probability theory and Bayesian computing together provide an alternative framework to deal with incomplete and uncertain data. Decision-Making Tools and Methods for Incomplete and Uncertain Data Emphasizing probability as an alternative to Boolean logic, Bayesian Programming covers new methods to build probabilistic programs for real-world applications. Written by the team who designed and implemented an efficient probabilistic inference engine to interpret Bayesian programs, the book offers many Python examples that are also available on a supplementary website together with an interpreter that allows readers to experiment with this new approach to programming. Principles and Modeling Only requiring a basic foundation in mathematics, the first two parts of the book present a new methodology for building subjective probabilistic models. The authors introduce the principles of Bayesian programming and discuss good practices for probabilistic modeling. Numerous simple examples highlight the application of Bayesian modeling in different fields. Formalism and Algorithms The third part synthesizes existing work on Bayesian inference algorithms since an efficient Bayesian inference engine is needed to automate the probabilistic calculus in Bayesian programs. Many bibliographic references are included for readers who would like more details on the formalism of Bayesian programming, the main probabilistic models, general purpose algorithms for Bayesian inference, and learning problems. FAQs Along with a glossary, the fourth part contains answers to frequently asked questions. The authors compare Bayesian programming and possibility theories, discuss the computational complexity of Bayesian inference, cover the irreducibility of incompleteness, and address the subjectivist versus objectivist epistemology of probability. The First Steps toward a Bayesian Computer A new modeling methodology, new inference algorithms, new programming languages, and new hardware are all needed to create a complete Bayesian computing framework. Focusing on the methodology and algorithms, this book describes the first steps toward reaching that goal. It encourages readers to explore emerging areas, such as bio-inspired computing, and develop new programming languages and hardware architectures.

"Bayesian Programming comprises a methodology, a programming language, and a set of tools for developing and applying hellip; complex models. hellip; The approach is described in great detail, with many worked examples backed up by an online code repository. Unlike other books that tend to focus almost entirely on mathematics, this one gives equal time to conceptual and methodological guidance for the model-builder. It grapples with the knotty problems that arise in practice, some of which do not yet have clear solutions." From the Foreword by Stuart Russell, University of California, Berkeley "The book has many worked examples backed up by an online code repository. The book provides a contribution on conceptual and methodological guidelines for model-builders. The authors discuss the problem how to build a Bayesian computer. The book has an excellent bibliography." Nirode C. Mohanty, in Zentralblatt MATH 1281 About the Author Pierre Bessiere is with CNRS, the French National Centre for Scientific Research. Juan-Manuel Ahuactzin, Kamel Mekhnacha, and Emmanuel Mazer are with Probayes Inc., France.