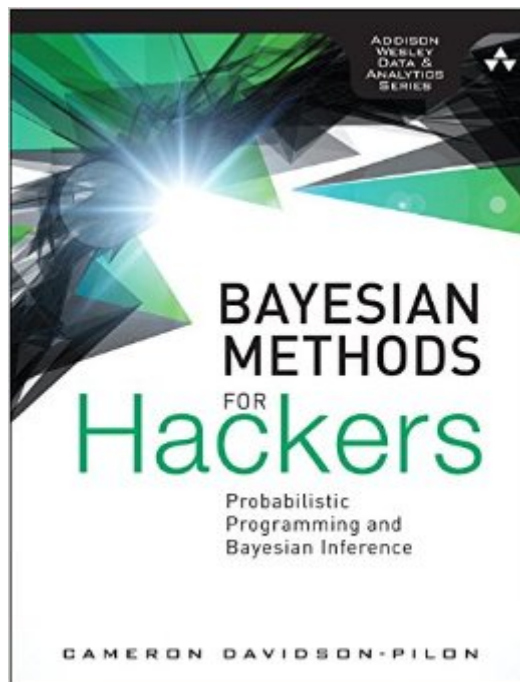


The book was found

Bayesian Methods For Hackers: Probabilistic Programming And Bayesian Inference (Addison-Wesley Data & Analytics)



Synopsis

Master Bayesian Inference through Practical Examples and Computation—Without Advanced Mathematical Analysis

Bayesian methods of inference are deeply natural and extremely powerful. However, most discussions of Bayesian inference rely on intensely complex mathematical analyses and artificial examples, making it inaccessible to anyone without a strong mathematical background. Now, though, Cameron Davidson-Pilon introduces Bayesian inference from a computational perspective, bridging theory to practice—freeing you to get results using computing power.

Bayesian Methods for Hackers illuminates Bayesian inference through probabilistic programming with the powerful PyMC language and the closely related Python tools NumPy, SciPy, and Matplotlib. Using this approach, you can reach effective solutions in small increments, without extensive mathematical intervention.

Davidson-Pilon begins by introducing the concepts underlying Bayesian inference, comparing it with other techniques and guiding you through building and training your first Bayesian model. Next, he introduces PyMC through a series of detailed examples and intuitive explanations that have been refined after extensive user feedback. You'll learn how to use the Markov Chain Monte Carlo algorithm, choose appropriate sample sizes and priors, work with loss functions, and apply Bayesian inference in domains ranging from finance to marketing. Once you've mastered these techniques, you'll constantly turn to this guide for the working PyMC code you need to jumpstart future projects.

Coverage includes

- Learning the Bayesian state of mind
- Understanding how computers perform Bayesian inference
- Using the PyMC Python library to program Bayesian analyses
- Building and debugging models with PyMC
- Testing your model's goodness of fit
- Opening the black box of the Markov Chain Monte Carlo algorithm to see how and why it works
- Leveraging the power of the Law of Large Numbers
- Mastering key concepts, such as clustering, convergence, autocorrelation, and thinning
- Using loss functions to measure an estimate's weaknesses based on your goals and desired outcomes
- Selecting appropriate priors and understanding how their influence changes with dataset size
- Overcoming the exploration versus exploitation dilemma: deciding when pretty good is good enough
- Using Bayesian inference to improve A/B testing
- Solving data science problems when only small amounts of data are available

Cameron Davidson-Pilon has worked in many areas of applied mathematics, from the evolutionary dynamics of genes and diseases to stochastic modeling of financial prices. His contributions to the open source community include lifelines, an implementation of survival analysis in Python. Educated at the University of Waterloo and at the Independent University of Moscow, he currently works with the online commerce leader Shopify.

Book Information

Series: Addison-Wesley Data & Analytics

Paperback: 256 pages

Publisher: Addison-Wesley Professional; 1 edition (October 12, 2015)

Language: English

ISBN-10: 0133902838

ISBN-13: 978-0133902839

Product Dimensions: 7 x 0.5 x 9 inches

Shipping Weight: 9.1 ounces (View shipping rates and policies)

Average Customer Review: 3.8 out of 5 stars [See all reviews](#) (12 customer reviews)

Best Sellers Rank: #68,700 in Books (See Top 100 in Books) #29 in [Books > Computers & Technology > Programming > Software Design, Testing & Engineering > Testing](#) #35 in [Books > Computers & Technology > Databases & Big Data > Data Mining](#) #58 in [Books > Textbooks > Computer Science > Database Storage & Design](#)

Customer Reviews

I really like the book, but want to bring up two things neglected by its author. One is acknowledgments. "Bayesian Methods For Hackers" did not appear in a vacuum. I would like to see a hat tip to the creators of PyMC, and at least a mention of BUGS, the still-very-much-alive software which brought Bayesian methods to academic masses and inspired MCMC-engine projects like PyMC. Then there are PyMC's cousins JAGS and STAN - these can be familiar to the R crowd - and people who wrote popular books on Bayesian analysis, such as John Kruschke, the author of "Doing Bayesian Data Analysis". (I should also mention James Stone, with his "Bayes' Rule". "Bayesian Modeling Using WinBUGS" by Ioannis Ntzoufras could have had more impact, but its publisher, Wiley, sabotaged the book with greedy pricing and no-frills presentation. Looking into the near future - I see that Manning have their own "probabilistic programming" book in the works, by Avi Pfeiffer). Naming those people, programs and books would provide useful pointers to aspiring "Bayesian hackers". The second reservation is about editorial effort. The very first page (when it used "ascribe" instead of "subscribe") told me that the manuscript had not been proof-read. As I went through the book, I found more unpolished passages, and a handful of lines capable of triggering a facepalm by a statistics professor. Now, this is not a book for statistics professors - they don't tend to use Python, for starters, while BMH assumes that you have Python installed - and the practical question is whether these issues are going to seriously frustrate or mislead the average

reader. My answer is "not really".

[Download to continue reading...](#)

Bayesian Methods for Hackers: Probabilistic Programming and Bayesian Inference
(Addison-Wesley Data & Analytics) Data Just Right: Introduction to Large-Scale Data & Analytics
(Addison-Wesley Data and Analytics) R for Everyone: Advanced Analytics and Graphics
(Addison-Wesley Data and Analytics) R for Everyone: Advanced Analytics and Graphics
(Addison-Wesley Data & Analytics Series) Data Analytics: Practical Data Analysis and Statistical
Guide to Transform and Evolve Any Business Leveraging the Power of Data Analytics, Data
Science, ... (Hacking Freedom and Data Driven Book 2) Hadoop 2 Quick-Start Guide: Learn the
Essentials of Big Data Computing in the Apache Hadoop 2 Ecosystem (Addison-Wesley Data &
Analytics) Hadoop 2 Quick-Start Guide: Learn the Essentials of Big Data Computing in the Apache
Hadoop 2 Ecosystem (Addison-Wesley Data & Analytics Series) Apache Hadoop YARN: Moving
beyond MapReduce and Batch Processing with Apache Hadoop 2 (Addison-Wesley Data &
Analytics) Apache Hadoop YARN: Moving beyond MapReduce and Batch Processing with Apache
Hadoop 2 (Addison-Wesley Data & Analytics Series) Programming #8:C Programming Success in a
Day & Android Programming In a Day! (C Programming, C++programming, C++ programming
language, Android , Android Programming, Android Games) Programming #57: C++ Programming
Professional Made Easy & Android Programming in a Day (C++ Programming, C++ Language,
C++for beginners, C++, Programming ... Programming, Android, C, C Programming) Big Data For
Beginners: Understanding SMART Big Data, Data Mining & Data Analytics For improved Business
Performance, Life Decisions & More! Data Architecture: A Primer for the Data Scientist: Big Data,
Data Warehouse and Data Vault Advanced Programming in the UNIX Environment
(Addison-Wesley Professional Computing Series) The Go Programming Language
(Addison-Wesley Professional Computing Series) Advanced Programming in the UNIX(R)
Environment (Addison-Wesley Professional Computing Series) Win32 Programming
(Addison-Wesley Advanced Windows Series)(2 Vol set) Programming #45: Python Programming
Professional Made Easy & Android Programming In a Day! (Python Programming, Python
Language, Python for beginners, ... Programming Languages, Android Programming)
Counterfactuals and Causal Inference: Methods and Principles for Social Research (Analytical
Methods for Social Research) Big Data, MapReduce, Hadoop, and Spark with Python: Master Big
Data Analytics and Data Wrangling with MapReduce Fundamentals using Hadoop, Spark, and
Python

[Dmca](#)