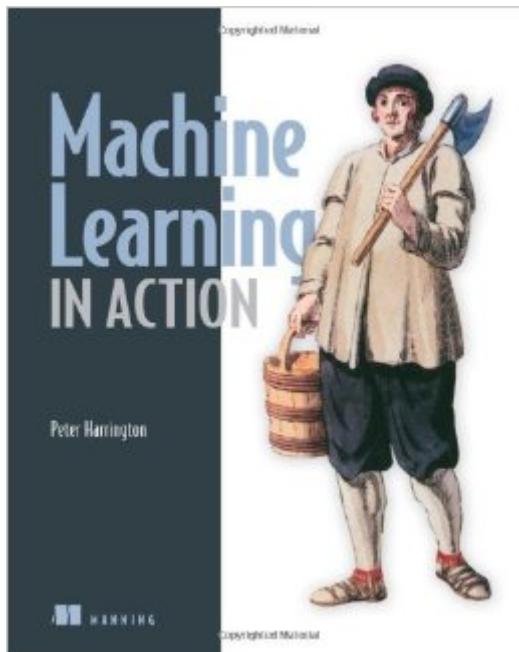


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# Machine Learning In Action



## Synopsis

Summary Machine Learning in Action is unique book that blends the foundational theories of machine learning with the practical realities of building tools for everyday data analysis. You'll use the flexible Python programming language to build programs that implement algorithms for data classification, forecasting, recommendations, and higher-level features like summarization and simplification. About the Book A machine is said to learn when its performance improves with experience. Learning requires algorithms and programs that capture data and ferret out the interesting or useful patterns. Once the specialized domain of analysts and mathematicians, machine learning is becoming a skill needed by many. Machine Learning in Action is a clearly written tutorial for developers. It avoids academic language and takes you straight to the techniques you'll use in your day-to-day work. Many (Python) examples present the core algorithms of statistical data processing, data analysis, and data visualization in code you can reuse. You'll understand the concepts and how they fit in with tactical tasks like classification, forecasting, recommendations, and higher-level features like summarization and simplification. Readers need no prior experience with machine learning or statistical processing. Familiarity with Python is helpful. Purchase of the print book comes with an offer of a free PDF, eBook, and Kindle eBook from Manning. Also available is all code from the book. What's InsideA no-nonsense introduction Examples showing common ML tasks Everyday data analysis Implementing classic algorithms like Apriori and AdaboostTable of ContentsPART 1 CLASSIFICATION Machine learning basics Classifying with k-Nearest Neighbors Splitting datasets one feature at a time: decision trees Classifying with probability theory: naïve Bayes Logistic regression Support vector machines Improving classification with the AdaBoost meta algorithm PART 2 FORECASTING NUMERIC VALUES WITH REGRESSION Predicting numeric values: regression Tree-based regression PART 3 UNSUPERVISED LEARNING Grouping unlabeled items using k-means clustering Association analysis with the Apriori algorithm Efficiently finding frequent itemsets with FP-growth PART 4 ADDITIONAL TOOLS Using principal component analysis to simplify data Simplifying data with the singular value decomposition Big data and MapReduce

## Book Information

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## Customer Reviews

I agree with other reviewers' complaints on the repetitiveness and poor flow of this book, but I want to point out some other concerns and appreciations. In the preface Harrington emphasizes the importance of knowing the theory and being able to connect the theory to the algorithms and applications. I wholeheartedly agree with this statement, but it appears Harrington forgot this was his stated goal. The mathematics contained in the book is wishy-washy and vague, and its connections to the algorithms is at best tenuous. Harrington rarely explains why a particular formula is used, and when he does he's really explaining how it's used and not why it makes sense to use it (given, this is a common criticism of applied mathematics). He will often throw in mathematical jargon without a useable explanation. And for every paragraph spent on mathematical theory, five paragraphs are spent on how to use various third-party libraries for graphing, UI, and data collection (e.g., Tkinter, Matplotlib, Yahoo! PlaceFinder API, Google Shopping API, etc.). These are great, but they massively clutter the text. I'd much rather have a 200 page appendix than have circuitous detours sprinkled throughout the book. One big plus is in his treatment of support vector machines. He includes (unlike many texts which are solely about support vector machines) a complete python implementation of the Sequential Minimal Optimization algorithm. That being said, it's a horrendous piece of code clearly not written for legibility. This page (page 109) is littered with at least fifteen 1-3 letter variable names and pointless statements like "if L==H: print 'L==H'; continue".

Looking at many good reviews on , I decided to purchase this book. It's a decent book, but IMO it has been edited poorly and the code has not been tested properly. The introduction chapter got me really excited, just like other Manning's "in Action" books do. But once I started executing the code in chapter 2 "Classifying with k-nearest neighbors" I realized that the code had bugs. Though I could figure out what's wrong and fix the bugs, I did not expect this from Manning, after having read some of their excellent books like (The Quick Python Book, Second Edition, Spring in Action and Hadoop

in Action). Moreover the book has some introduction to python and numpy in appendix A. I believe the author could have pointed the reader elsewhere for learning python and those pages could have been used to explain more of numpy and matplotlib, which the author uses freely without any explanation in the text. (Yup, be ready to read some online numpy and matplotlib tutorials and documentation.) If you don't know python, then you can do what I did: read The Quick Python Book, Second Edition and then attempt this book.

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