
Preface

Machine learning is an integral part of many commercial applications and research projects today, in areas ranging from medical diagnosis and treatment to finding your friends on social networks. Many people think that machine learning can only be applied by large companies with extensive research teams. In this book, we want to show you how easy it can be to build machine learning solutions yourself, and how to best go about it. With the knowledge in this book, you can build your own system for finding out how people feel on Twitter, or making predictions about global warming. The applications of machine learning are endless and, with the amount of data available today, mostly limited by your imagination.

Who Should Read This Book

This book is for current and aspiring machine learning practitioners looking to implement solutions to real-world machine learning problems. This is an introductory book requiring no previous knowledge of machine learning or artificial intelligence (AI). We focus on using Python and the `scikit-learn` library, and work through all the steps to create a successful machine learning application. The methods we introduce will be helpful for scientists and researchers, as well as data scientists working on commercial applications. You will get the most out of the book if you are somewhat familiar with Python and the `NumPy` and `matplotlib` libraries.

We made a conscious effort not to focus too much on the math, but rather on the practical aspects of using machine learning algorithms. As mathematics (probability theory, in particular) is the foundation upon which machine learning is built, we won't go into the analysis of the algorithms in great detail. If you are interested in the mathematics of machine learning algorithms, we recommend the book *The Elements of Statistical Learning* (Springer) by Trevor Hastie, Robert Tibshirani, and Jerome Friedman, which is available for free at [the authors' website](#). We will also not describe how to write machine learning algorithms from scratch, and will instead focus on