Synopsis
This book, together with specially prepared online material freely accessible to our readers, provides a complete introduction to Machine Learning, the technology that enables computational systems to adaptively improve their performance with experience accumulated from the observed data. Such techniques are widely applied in engineering, science, finance, and commerce. This book is designed for a short course on machine learning. It is a short course, not a hurried course. From over a decade of teaching this material, we have distilled what we believe to be the core topics that every student of the subject should know. In addition, our readers are given free access to online e-Chapters that we update with the current trends in Machine Learning, such as deep learning and support vector machines. We chose the title `learning from data'; that faithfully describes what the subject is about, and made it a point to cover the topics in a story-like fashion. Our hope is that the reader can learn all the fundamentals of the subject by reading the book cover to cover.
Learning from data has distinct theoretical and practical tracks. In this book, we balance the theoretical and the practical, the mathematical and the heuristic. Theory that establishes the conceptual framework for learning is included, and so are heuristics that impact the performance of real learning systems. What we have emphasized are the necessary fundamentals that give any student of learning from data a solid foundation. The authors are professors at California Institute of Technology (Caltech), Rensselaer Polytechnic Institute (RPI), and National Taiwan University (NTU), where this book is the text for their popular courses on machine learning. The authors also consult extensively with financial and commercial companies on machine learning applications, and have led winning teams in machine learning competitions.

Book Information
Hardcover: 213 pages
Publisher: AMLBook (March 27, 2012)
Language: English
ISBN-10: 1600490069
Product Dimensions: 9.4 x 6.7 x 0.4 inches
Shipping Weight: 1.4 pounds
Average Customer Review: 4.6 out of 5 stars
Best Sellers Rank: #5,804 in Books (See Top 100 in Books) #2 in Books > Computers & Technology > Computer Science > AI & Machine Learning > Computer Vision & Pattern
Customer Reviews

TLDR Summary: If Machine Learning is like Mechanics, "Learning from Data" teaches you Newton’s Laws!---------------------------Machine Learning (ML), Data Mining (DM), Predictive Modeling, Big Data, Statistical Inference, Pattern Recognition, Regression, Classification: by whichever name you call it, you will find hundreds of books by the same name, and in theoretical as well as applied avatars. The applied ones tend to be books based on ML/DM programming libraries such as R, Weka (Java), and SciPy/NumPy (Python) and really are not meant to teach you the underlying foundations but I digress too soon. I possess the standard three introductory texts in ML: Pattern Classification (Duda, Hart, Stork), Pattern Recognition (Bishop) and Machine Learning (Mitchell). In addition, I have read portions of Statistical Learning (Hastie),

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