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Machine Learning With Random Forests And Decision Trees: A Visual Guide For Beginners





Synopsis

Machine Learning - Made Easy To UnderstandIf you are looking for a book to help you understand how the machine learning algorithms "Random Forest" and "Decision Trees" work behind the scenes, then this is a good book for you. Those two algorithms are commonly used in a variety of applications including big data analysis for industry and data analysis competitions like you would find on Kaggle. This book explains how Decision Trees work and how they can be combined into a Random Forest to reduce many of the common problems with decision trees, such as overfitting the training data.Several Dozen Visual ExamplesEquations are great for really understanding every last detail of an algorithm. A But to get a basic idea of how something works, in a way that will stick with you 6 months later, nothing beats pictures. Â This book contains several dozen images which detail things such as how a decision tree picks what splits it will make, how a decision tree can over fit its data, and how multiple decision trees can be combined to form a random forest. This Is Not A TextbookMost books, and other information on machine learning, that I have seen fall into one of two categories, they are either textbooks that explain an algorithm in a way similar to "And then the algorithm optimizes this loss function" or they focus entirely on how to set up code to use the algorithm and how to tune the parameters. This book takes a different approach that is based on providing simple examples of how Decision Trees and Random Forests work, and building on those examples step by step to encompass the more complicated parts of the algorithms. Â The actual equations behind decision trees and random forests get explained by breaking them down and showing what each part of the equation does, and how it affects the examples in question. Python Files & Excel File For Many Of The Examples Shown In The BookSome topics in machine learning don't lend themselves to equations in an Excel table. A Things like error checking or complicated conditionals are hard to replicate outside of code. However some topics work guite well in a spreadsheet. Â Topics such as entropy and information gain, which is how a decision tree picks its splits, can be easily calculated in a spreadsheet. Â The spreadsheet used to generate many of the examples in this book is available for free download, as are all of the Python scripts that ran the Random Forests & Decision Trees in this book and generated many of the plots and images. Â Â If you are someone who learns by playing with the code, and editing the data or equations to see what changes, then use those resources along with the book for a deeper understanding. Topics CoveredThe topics covered in this book areAn overview of decision trees and random forestsA manual example of how a human would classify a dataset, compared to how a decision tree would workHow a decision tree works, and why it is prone to overfittingHow decision trees get combined to form a random forestHow to use that random forest to classify data and make predictionsHow to

determine how many trees to use in a random forestJust where does the "randomness" come fromOut of Bag Errors & Cross Validation - how good of a fit did the machine learning algorithm make?Gini Criteria & Entropy Criteria - how to tell which split on a decision tree is best among many possible choicesAnd Morelf you want to know more about how these machine learning algorithms work, but don't need to reinvent them, this is a good book for you

Book Information

File Size: 4882 KB Print Length: 73 pages Simultaneous Device Usage: Unlimited Publication Date: August 12, 2016 Sold by: Â Digital Services LLC Language: English ASIN: B01JBL8YVK Text-to-Speech: Enabled X-Ray: Not Enabled Word Wise: Not Enabled Lending: Not Enabled Screen Reader: Supported Enhanced Typesetting: Enabled Best Sellers Rank: #7,750 Paid in Kindle Store (See Top 100 Paid in Kindle Store) #1 in Kindle Store > Kindle eBooks > Computers & Technology > Computer Science > Data Modeling & Design #2 in Books > Science & Math > Mathematics > Mathematical Analysis #2 in Kindle Store > Kindle Short Reads > Two hours or more (65-100 pages) > Science & Math

Customer Reviews

Perfect primer for someone new to ML. Approaches the topic by teaching one model (random trees) rather than a broad overview of different models. Walks through the specific math involved in developing the model and the different trade-off design decisions a modeler would make. Includes some basic python examples but is light in coding. Is not focused on general discussion of types of business problems that this model would be helpful for solving.

A very concise and clearly written book and one can completely read it end to end in a day or two with much ease. For the money this one is a STEAL... Very happy with this purchase.

This is really a great introduction. In my opinion, it takes intelligence to make the complex simple! It's much easier for me to learn if I first learn the high level theory, and "reasons why". This book is a quick read, and gives you a structured outline to investigate deeper. I will definitely read more from this author!

I've got a strong mathematics background, and this book was easy to read in a couple of brief sittings. It's given me some ideas on how to get started. The examples given are in python, but I expect this could all be implemented in your favorite programming language, as the algorithmic concepts are the main focus of this eBook. Certainly worth a few bucks :)

Quick and easy read; I believe it was Einstein who said that being able to explain things to a child, somehow implies that you understand them: the author achieves that here. Examples are graphical and clear, rationale is explicitly discussed, good cohesion. I would've liked some insights (however concise) on alternatives to random forests, their pros/cons, and maybe some comparison criteria. Overall, a great and informative read.

This is your book of choice. It's easy to remember concepts by just remembering the example used. I enjoyed reading it

Scott gave me exactly what I needed -- one end of the string to start pulling.

I found this book to be an easy introduction to the topic. I would recommend it to others who are interested in obtaining a basic understanding.

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