MACHINE LEARNING / PYTHON

Machine Learning Algorithms IN DEPTH

Vadim Smolyakov

Learn how machine learning algorithms work from the ground up so you can effectively troubleshoot your models and improve their performance. This book guides you from the core mathematical foundations of the most important ML algorithms to their Python implementations, with a particular focus on probability-based methods.

Machine Learning Algorithms in Depth dissects and explains dozens of algorithms across a variety of applications, including finance, computer vision, and NLP. Each algorithm is mathematically derived, followed by its hands-on Python implementation along with insightful code annotations and informative graphics. You'll especially appreciate author Vadim Smolyakov's clear interpretations of Bayesian algorithms for Monte Carlo and Markov models.

What's Inside

- Monte Carlo stock price simulation
- EM algorithm for hidden Markov models
- Imbalanced learning, active learning, and ensemble learning
- Bayesian optimization for hyperparameter tuning
- Anomaly detection in time-series

For machine learning practitioners familiar with linear algebra, probability, and basic calculus.

Vadim Smolyakov is a data scientist in the Enterprise & Security DI R&D team at Microsoft.

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"I love this book! It shows you how to implement common ML algorithms in plain Python with only the essential libraries, so you can see how the computation and math works in practice."
—Junpeng Lao
Senior Data Scientist at Google

"I highly recommend this book. In the era of ChatGPT real knowledge of algorithms is invaluable."
—Vatsal Desai, InfoDesk

"Explains algorithms so well that even a novice can digest it."
—Harsh Raval, Zymr

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