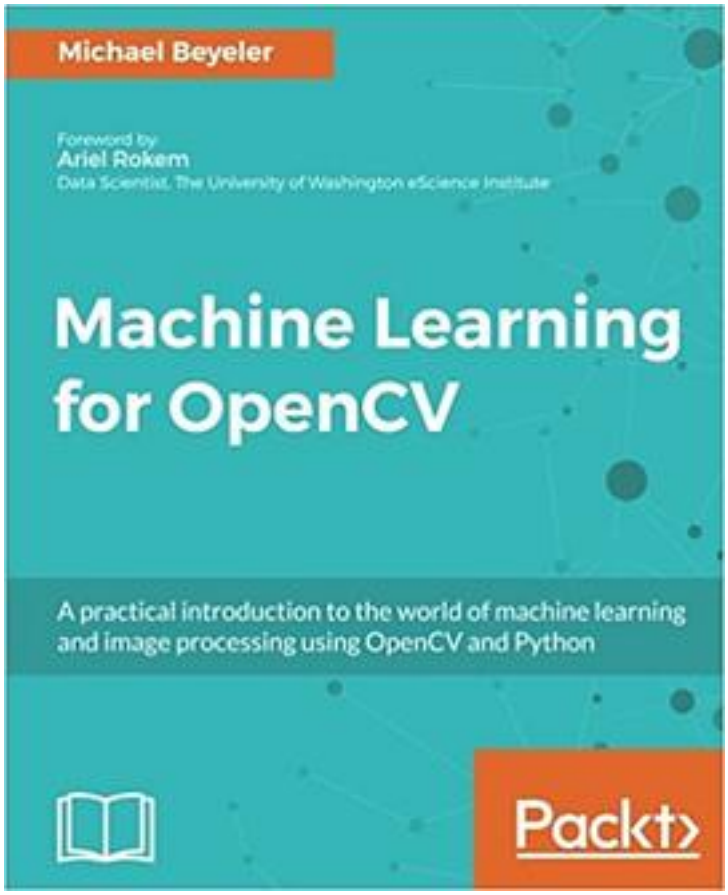
Machine Learning for OpenCV



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About This Book

Load, store, edit, and visualize data using OpenCV and PythonGrasp the fundamental concepts of classification, regression, and clusteringUnderstand, perform, and

experiment with machine learning techniques using this easy-to-follow guideEvaluate, compare, and choose the right algorithm for any task

Who This Book Is For

This book targets Python programmers who are already familiar with OpenCV; this book will give you the tools and understanding required to build your own machine learning systems, tailored to practical real-world tasks.

What You Will Learn

Explore and make effective use of OpenCV's machine learning moduleLearn deep learning for computer vision with PythonMaster linear regression and regularization techniquesClassify objects such as flower species, handwritten digits, and pedestriansExplore the effective use of support vector machines, boosted decision trees, and random forestsGet acquainted with neural networks and Deep Learning to address real-world problemsDiscover hidden structures in your data using k-means clusteringGet to grips with data pre-processing and feature engineering

In Detail

Machine learning is no longer just a buzzword, it is all around us: from protecting your email, to automatically tagging friends in pictures, to predicting what movies you like. Computer vision is one of today's most exciting application fields of machine learning, with Deep Learning driving innovative systems such as self-driving cars and Google's DeepMind.

OpenCV lies at the intersection of these topics, providing a comprehensive open-source library for classic as well as state-of-the-art computer vision and machine learning algorithms. In combination with Python Anaconda, you will have access to all the open-source computing libraries you could possibly ask for.

Machine learning for OpenCV begins by introducing you to the essential concepts of statistical learning, such as classification and regression. Once all the basics are covered, you will start exploring various algorithms such as decision trees, support vector machines, and Bayesian networks, and learn how to combine them with other OpenCV functionality. As the book progresses, so will your machine learning skills, until you are ready to take on today's hottest topic in the field: Deep Learning.

By the end of this book, you will be ready to take on your own machine learning problems, either by building on the existing source code or developing your own algorithm from scratch!

Style and approach

OpenCV machine learning connects the fundamental theoretical principles behind machine learning to their practical applications in a way that focuses on asking and answering the right questions. This book walks you through the key elements of OpenCV and its powerful machine learning classes, while demonstrating how to get to grips with a range of models.

作者介绍:

Michael Beyeler is a Postdoctoral Fellow in Neuroengineering and Data Science at the University of Washington, where he is working on computational models of bionic vision in order to improve the perceptual experience of blind patients implanted with a retinal prosthesis ("bionic eye"). His work lies at the intersection of neuroscience, computer engineering, computer vision, and machine learning. Michael is the author of OpenCV with Python Blueprints, a practical guide for building advanced computer vision projects. He is also an active contributor to several open-source software projects, and has professional programming experience in Python, C/C++, CUDA, MATLAB, and Android.

Michael received a Ph.D. in Computer Science from the University of California, Irvine as well as a M.Sc. in Biomedical Engineering and a B.Sc. in Electrical Engineering from ETH Zurich, Switzerland. When he is not "nerding out" on brains, he can be found on top of a snowy mountain, in front of a live band, or behind the piano.

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标签

机器学习

入门

openCV

Python

Programming

评论

太简单了，没怎么讲OpenCV, 就第6章一个行人侦测的例子不错

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书评

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