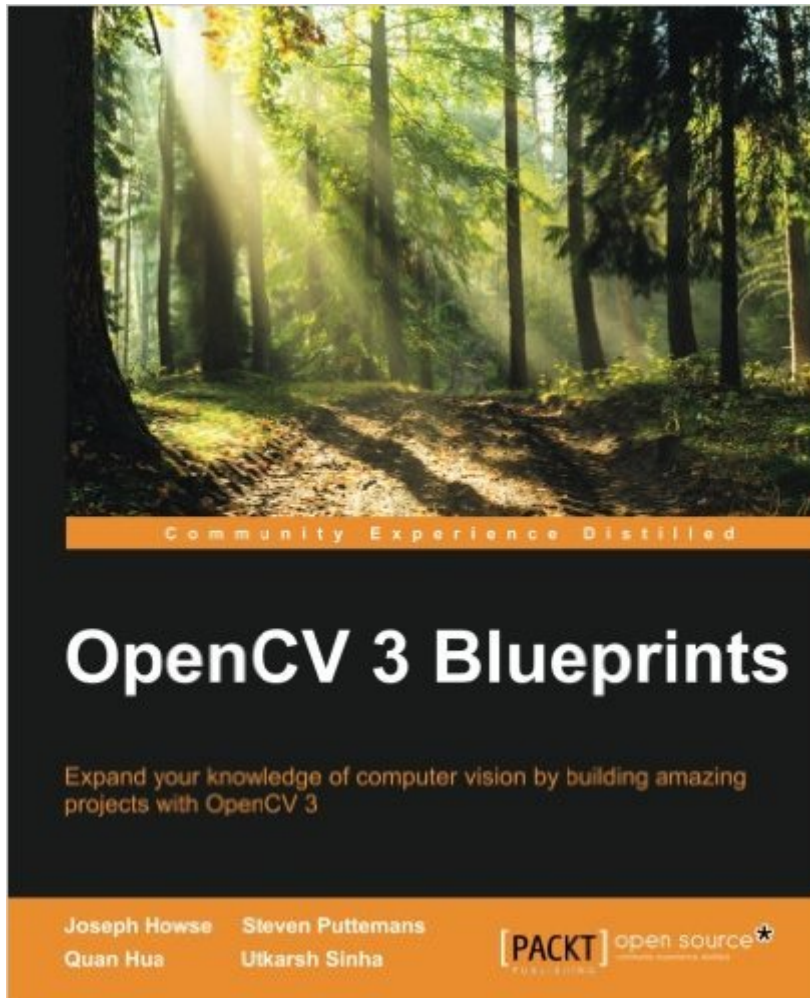


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# OpenCV Blueprints



## Synopsis

Expand your knowledge of computer vision by building amazing projects with OpenCV 3 About This Book Build computer vision projects to capture high-quality image data, detect and track objects, process the actions of humans or animals, and much more Discover practical and interesting innovations in computer vision while building atop a mature open-source library, OpenCV 3 Familiarize yourself with multiple approaches and theories wherever critical decisions need to be made Who This Book Is For This book is ideal for you if you aspire to build computer vision systems that are smarter, faster, more complex, and more practical than the competition. This is an advanced book intended for those who already have some experience in setting up an OpenCV development environment and building applications with OpenCV. You should be comfortable with computer vision concepts, object-oriented programming, graphics programming, IDEs, and the command line. What You Will Learn Select and configure camera systems to see invisible light, fast motion, and distant objects Build a "camera trap", as used by nature photographers, and process photos to create beautiful effects Develop a facial expression recognition system with various feature extraction techniques and machine learning methods Build a panorama Android application using the OpenCV stitching module in C++ with NDK support Optimize your object detection model, make it rotation invariant, and apply scene-specific constraints to make it faster and more robust Create a person identification and registration system based on biometric properties of that person, such as their fingerprint, iris, and face Fuse data from videos and gyroscopes to stabilize videos shot from your mobile phone and create hyperlapse style videos In Detail Computer vision is becoming accessible to a large audience of software developers who can leverage mature libraries such as OpenCV. However, as they move

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## Customer Reviews

It's a good book that covers a lot of advanced OpenCV concepts, and the code is available online. That being said, the book is really messy. The different projects are all over the place in terms of programming languages, hardware setups, and difficulty level. The writing style is also noticeably different from chapter to chapter. Some chapters focus extensively on theory, and show code only briefly towards the end. Some concepts are introduced several times, such as the cascade classifier. Not the OpenCV masterpiece that others proclaimed it to be.

Quote from a friend: "Very well written, imaginative, insightful, and humorous. Provides related background supplement for fast learning. Step by step introduction to full-function program with dedicated and highly organized source code creates a smooth reading experience. As for the topic, it covers some mobile app development and machine learning projects, all taking care of actual deployment as a good application reference. Last but not least, clear and simple explanations for complex concepts to brighten up the dry technical talk. Apparently, this is a very useful and well-designed OpenCV 3 reference book."

If you are an OpenCV user, and you want to go behind the tutorial, implement real-world applications, see how optimizations can be achieved with the latest release of OpenCV, this book is for you. If you want to understand how to implement a state-of-the-art paper, with tricks and optimizations, in a fast, but yet effective way, this book gives you 6 different projects to do it. Most of OpenCV tutorials and/or books teach you the documentation of the functions, a little of the background, and gives you some future directions. Here, you have real applications, which involve more than OpenCV/Computer Vision solutions. Don't expect that all the functions of OpenCV will be covered, they are presented in-place, while you are writing the (not so) toy application. This book won't teach you the theory behind the applications build, it will focus on the effectiveness. It assumes you already have this background, or you will learn it using another book. It's a great example of how to use a vast library (often used only for prototyping) inside industrial applications. What is of particular interest, in my opinion, is the focus made on extending the idea

beyond the core of the method to the usage in the difficult / broad environment, with more than 2-3 users/cases. Don't hesitate to go behind the first chapter about camera type comparisons, that could be quite intimidatingâA must have, if one of the chapter interest you!

This book was insightful and had an approachable layout and all the content necessary to get up and running with OpenCV 3. As I expect from an IT book, the content of this publication contained a step-by-step depiction of installing, using, and testing and pragmatic applications. What's more, I was so happy to gain value from supplier recommendation, relevant theoretical background information, and thorough steps to create projects in image capture and processing, machine learning, application development, and more a couple of more advanced facial recognition and gyroscope methods. If you are serious about learning and developing image-based approaches and applications, this is a wonderful resource to get you started.

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