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# Making Things See: 3D Vision With Kinect, Processing, Arduino, And MakerBot (Make: Books)



## Synopsis

This detailed, hands-on guide provides the technical and conceptual information you need to build cool applications with Microsoft's Kinect, the amazing motion-sensing device that enables computers to see. Through half a dozen meaty projects, you'll learn how to create gestural interfaces for software, use motion capture for easy 3D character animation, 3D scanning for custom fabrication, and many other applications. Perfect for hobbyists, makers, artists, and gamers, *Making Things See* shows you how to build every project with inexpensive off-the-shelf components, including the open source Processing programming language and the Arduino microcontroller. You'll learn basic skills that will enable you to pursue your own creative applications with Kinect. Create Kinect applications on Mac OS X, Windows, or Linux. Track people with pose detection and skeletonization, and use blob tracking to detect objects. Analyze and manipulate point clouds. Make models for design and fabrication, using 3D scanning technology. Use MakerBot, RepRap, or Shapeways to print 3D objects. Delve into motion tracking for animation and games. Build a simple robot arm that can imitate your arm movements. Discover how skilled artists have used Kinect to build fascinating projects.

## Book Information

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## Customer Reviews

This book makes it very easy to experiment with Kinect, Processing is easy to set up, simple to write

and allows for rapid iterations. Perfect even when you're not that into programming (yet). The book has a very gradual increase in complexity, taking you from 2D, to 3D to changing the position of virtual camera and eventually scanning a 3D environment. The book starts to get really cool when you get to the Skeleton tracking part, which allows you to calculate the angles between limbs and use those to control the arm of an Arduino robot. Another great thing about the examples is how they show you all the basic elements you need to build highly interactive programs, like a virtual drum kit, controlling a robot or 3D model. I would definitely recommend this book to anyone interesting in experimenting with Kinect. I easily got through the book in 3 days and with the help of Greg's GitHub [...] you should have no trouble getting the examples to work! A definite recommendation!

Of the 3 Kinect programming books I got (mainly cuz each one has its own SDK/language of choice), this one got me up & running the fastest. However, the instructions are dated for installing on Windows, they are meant for the original X-Box Kinect sensor not the one dedicated to Windows. Please see Ramsri Goutham's excellent tutorial:[...] In case the link is taken out of the review you can `g**gl*` Kinect sensor for OpenNI. Basically, there is a different method to install the correct drivers for the Kinect for Windows product. All the instructions for the OpenNI software in the book likely predate the Kinect for Windows product and fail to mention that the most common problem now has nothing to do with x86 vs. x64 but that the original Kinect hacks were for the Xbox Kinect, NOT THE KINECT FOR WINDOWS DEVICE!!!! You MUST use the `avin2` package and replace the `default` Kinect sensor mod, and you MUST force the computer to NOT use the automatic Windows update drivers, and you MUST force the computer to install the PrimeSense drivers by navigating from driver update to `choose from a list` and selecting `all devices` and scrolling to PrimeSense and overriding the driver not signed warnings!!! Whew!

"Making Things See" contains some of the most comprehensive documentation for the Kinect that I've been able to find. The prologue interviews were a good motivation for why the book exists: to help others start to discover the full potential of this wonderful little device. As a programmer, I found the explanations of the various computer vision algorithms accurate and helpful for my own understanding of what the Kinect was capable of. All in all a highly recommended read.

This book is 5 star for non-programmers. Mr. Borenstein walks the reader through the process of writing Kinect applications in a simple straightforward way that is extremely easy to follow. The code in the book is written using Processing ([processing.org](http://processing.org)) which means even people with almost no

background in software development and be up and running very quickly! If you are new to all of this then I recommend you read this book! You'll be amazed at how easy it is to write some really impressive Kinect programs. The book is a 4 star for professional software developers. Still a great value for the price and it will give you a quick ramp-up into Kinect development. But after reading this you'll want to check out something more technical if you are interesting in writing applications using the Microsoft Kinect SDK or one of the several open source tool sets.

I just got this book and am enjoying it very much. I love that there are resources like this out there for people geek out on. The main reason for the review was to save some people time if they purchase the book a year after its publication date like me. Getting up and running can be a frustrating task going by the book, when I probably would have been better off just downloading everything without a care in the world. In the setup section it has a clear warning not to install the Microsoft SDK, otherwise your OpenNI stuff will not work. So I didn't install it. Strangely it was working from the OpenNI stuff, but everytime I ran the examples in Processing, just said over and over can't find the device. So I finally gave in and installed the SDK because it sort of said to do so on the SimpleOpenNI site. Everything worked like a charm. There was no mention of this error in the book, and little if any online mention of it. So..word of caution, even if there was a compatibility issue with the SDK when this book was first written, the open source community has clearly resolved that. **INSTALL AWAY!** After that headache, I was up and running the examples in no time. Looking forward to reading the rest of the book frustration free:)

The material for this book is very out of date. I am sure it was a good book a few years ago but now all of the libraries are out of date, and there is no way to even run the examples shown.

Once I received the PDF version from O'Reilly, I found the book to be well written. It provides in-depth technical coverage of the Kinect 360 as a 3D camera. Perfect for my application. The Kindle version that I originally purchased from did not include the illustrations. A big Thank You to Customer Service at O'Reilly for quickly correcting the problem.

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