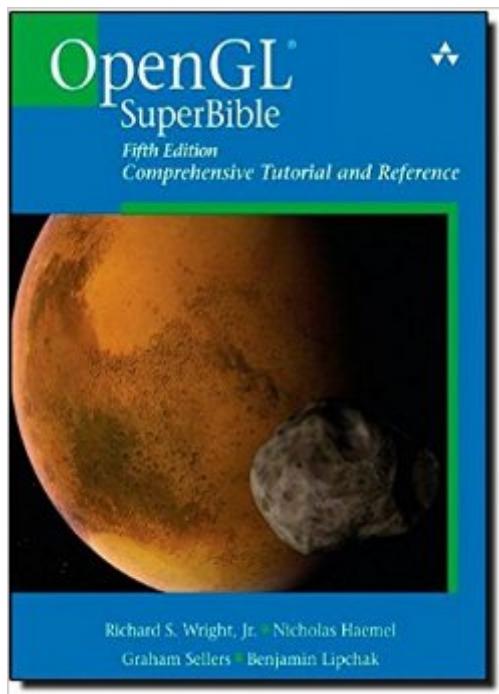


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OpenGL SuperBible: Comprehensive Tutorial And Reference (5th Edition)



Synopsis

OpenGL® SuperBible, Fifth Edition is the definitive programmer's guide, tutorial, and reference for the world's leading 3D API for real-time computer graphics, OpenGL 3.3. The best all-around introduction to OpenGL for developers at all levels of experience, it clearly explains both the API and essential associated programming concepts. Readers will find up-to-date, hands-on guidance on all facets of modern OpenGL development, including transformations, texture mapping, shaders, advanced buffers, geometry management, and much more. Fully revised to reflect ARB's latest official specification (3.3), this edition also contains a new start-to-finish tutorial on OpenGL for the iPhone, iPod touch, and iPad. Coverage includes:

- A practical introduction to the essentials of real-time 3D graphics
- Core OpenGL 3.3 techniques for rendering, transformations, and texturing
- Writing your own shaders, with examples to get you started
- Cross-platform OpenGL: Windows (including Windows 7), Mac OS X, GNU/Linux, UNIX, and embedded systems
- OpenGL programming for iPhone, iPod touch, and iPad: step-by-step guidance and complete example programs
- Advanced buffer techniques, including full-definition rendering with floating point buffers and textures
- Fragment operations: controlling the end of the graphics pipeline
- Advanced shader usage and geometry management
- A fully updated API reference, now based on the official ARB (Core) OpenGL 3.3 manual pages
- New bonus materials and sample code on a companion Web site, www.starstonesoftware.com/OpenGL

Part of the OpenGL Technical Library—“The official knowledge resource for OpenGL developers

The OpenGL Technical Library provides tutorial and reference books for OpenGL. The Library enables programmers to gain a practical understanding of OpenGL and shows them how to unlock its full potential. Originally developed by SGI, the Library continues to evolve under the auspices of the OpenGL Architecture Review Board (ARB) Steering Group (now part of the Khronos Group), an industry consortium responsible for guiding the evolution of OpenGL and related technologies.

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Customer Reviews

I've learned OpenGL thanks to Richards books (the 2nd and 4th editions of the SuperBible), and today work as a professional 3D game engine programmer. Those books are very educational, and allow a newcomer to learn OpenGL faster than any other OpenGL programming book I've found. The 5th edition focuses on the new "core" OpenGL profile, which has deprecated the legacy "fixed function" API. The authors admit that they had a difficult task when rewriting the SuperBible - how do they lower the barrier of entry to a new API which is not beginner friendly? Their solution was to create a new OpenGL toolkit which simplifies access to core OpenGL. And this is the biggest issue with the 5th edition of the SuperBible - the book explains their custom toolkit, and not OpenGL itself. What a disappointment for someone wanting to learn modern OpenGL. My recommendation for newcomers to OpenGL and 3D programming: get the 4th edition of the SuperBible, and then grab the OpenGL ES 2.0 Programming Guide to learn about the "core" OpenGL profile. With OpenGL ES 2.0 (embedded systems), the Khronos group have removed all the legacy accessors from OpenGL, and left only the bare minimal needed to create 3D applications using programmable shaders. The Khronos group did such a good job with ES 2.0, that they decided to remove all legacy code from core OpenGL as well, and today (with the exception of geometry shaders), OpenGL ES2.0 and OpenGL 4.1 are essentially the same API. The ES2.0 programming guide also explains modern 3D graphics hardware design better than any other book I've discovered, and more importantly, it not only explains how to access the hardware using the new API, it explains WHY the API evolved to what it is today. Why is there a limit to number of attributes?

For years, books in the OpenGL SuperBible series were recommended for anyone looking for an excellent tutorial and thorough coverage of OpenGL features. But up to OpenGL 2.0, programming in OpenGL was done through the fixed function pipeline, and the OpenGL SuperBible books were the best place to start learning that. With GLSL introduced in OpenGL 2.0, OpenGL supported both the traditional fixed function pipeline and a new programmable pipeline where you can write your

own shader programs and have much more control over the graphic card. OpenGL 2.0 tried to have the best of both worlds: if you liked the old OpenGL then you can use it, and if you wanted to experiment with modern OpenGL you can use that as well. That resulted in a huge API with conflicting design goals. This conflict can be seen in the OpenGL(R) SuperBible: Comprehensive Tutorial and Reference (4th Edition), reflecting the version of OpenGL it covered. The tutorial part focused exclusively on fixed-function OpenGL. That part was excellent and I still use it as a reference when I'm programming for old mobile devices that supported only OpenGL ES 1.0. The book also introduced shaders among other advanced topics in the second part. This introduction didn't really follow from what you learned in the tutorial part. It was a group of separate articles that were written in a different style and tone. I don't doubt you can easily pick it up and learn writing shaders from these chapters, but they didn't really go about teaching you how to write shaders, instead focusing more on showing you cool examples of stuff you can do with shaders.

This book is very informative and thorough in its coverage. Before reading this book I knew some 3d math, and a rough idea of some 3D rendering topics, but had no experience with any graphics APIs. After having just completed this book, I can definitely say I have a clear idea of how OpenGL pipeline works, as well as various techniques for creating different effects, and for improving performance. Overall I am quite happy with this book. However this book is not without its flaws. There are a few major ones that jump out straight away: 1) The examples use a custom library written by the author called GLTools, which encapsulates most of the math, and geometry submission. I can see the motivation behind this, as it lets you quickly dive into running the examples without the 'boilerplate hump'. However the primary problem with GLTools is that it is a major dependency of the entire book, and while it doesn't do anything too complex, much of it is not explained until the very end of the book (and some of it is not explained at all). At least the source for GLTools is available. This was annoying for me because I wanted to start a mini-project after learning the basics to "cement" my knowledge before continuing with the advanced sections. However I needed to rely on GLTools, because it was intrinsic to the examples (geometry submission - which is not covered until chapter 12, the last chapter), and although the examples were running, I felt like I still didn't really know everything that was happening until I reached the end of the book. If you are new to OpenGL, you can't break off halfway through the book to make a simple app (without depending on GLTools), you must see it through to the end.

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