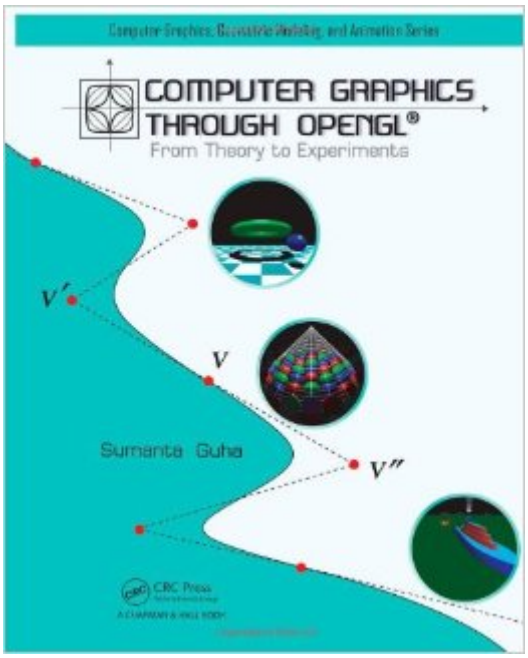
Computer Graphics Through OpenGL: From Theory To Experiments (Chapman & Hall/CRC Computer Graphics, Geometric Modeling, And Animation)



Synopsis

From geometric primitives to animation to 3D modeling to lighting and shading, Computer Graphics Through OpenGL: From Theory to Experiments is a comprehensive introduction to computer graphics that uses an active learning style to teach key concepts. Equally emphasizing theory and practice, the book provides an understanding not only of the principles of 3D computer graphics, but also the use of the OpenGL Application Programming Interface (API) to program 3D applications. Forming the undergraduate core of the book, the first fourteen chapters cover the concepts fundamental to 3D computer graphics and illustrate how to code fairly sophisticated 3D scenes and animation, including games and movies. The remaining chapters explore more advanced topics, such as the structure of curves and surfaces, applications of projective spaces and transformations, and programmable graphics pipelines. This textbook uses a hands-on, interactive approach that mixes theory and coding. Designed to be followed with a computer handy, the text makes the theory accessible by having students run clarifying code. Web ResourceThe bookâ ™s website www.sumantaguha.com provides program source code that runs on Windows, Mac OS, and Linux platforms. It also includes a guide to installing OpenGL and executing the programs, special software to help run the experiments, and figures from the book. In addition, the website provides a discussion forum for interaction among users of the book.

Book Information

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Customer Reviews

I like this book. First the down side: yes, like others have noted this book uses old-style OpenGL. But personally, that is how I like it. When I started learning Physics, it was all classical physics, and relativity came in only towards the end of "introductory" course.On the positive side, this book is less boring an introductory book than many others. The book is good at making sure that you understand the concepts, and then to tell you how it works in OpenGL, especially with its examples and exercises. Example code is also very helpful (yes, again its old-style). Few sections that I liked (as introduction to the topic) compared to other graphics textbooks (Shirley, Edward Angel etc.) include: composition of transformations, viewing transform (what exactly does gluLookAt do). As a beginner, I used to hate using glFrustum() and I've seen books/references saying its too complicated as opposed to gluPerspective. Well, once you read it here, you feel no such discrimination.Similarly there are certain topics I'd recommend you to read elsewhere: like derivation of projection matrix in perspective case (orthogonal case is done well in this book). There is nothing like David Mount's Lecture Notes to get a quick understanding of Projective Geometry and then moving on to deriving the projection matrix (rather than pulling some fancy formula out of thin air, like this book does).Also some may find that this book might be a bit less mathematically rigorous as opposed to certain other computer graphics books like "Fundamentals of Computer Graphics" by Shirley et al.Also, if you really need modern OpenGL (or something similar), have the "OpenGL ES 2.0 Programming Guide" on the side.

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