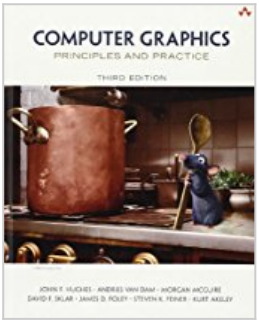

Computer Graphics: Principles and Practice (3rd Edition)

By John F. Hughes, Andries van Dam, Morgan McGuire, David F. Sklar, James D. Foley, Steven K. Feiner, Kurt Akeley

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Computer Graphics: Principles and Practice, Third Edition, **remains the most authoritative introduction to the field. The first edition, the original "Foley and van Dam," helped to define computer graphics and how it could be taught. The second edition became an even more comprehensive resource for practitioners and students alike. This third edition has been completely rewritten to provide detailed and up-to-date coverage of key concepts, algorithms, technologies, and applications.**

The authors explain the principles, as well as the mathematics, underlying computer graphics–knowledge that is essential for successful work both now and in the future. Early chapters show how to create 2D and 3D pictures right away, supporting experimentation. Later chapters, covering a broad range of topics, demonstrate more sophisticated approaches. Sections on current computer graphics practice show how to apply given principles in common situations, such as how to approximate an ideal solution on available hardware, or how to represent a data structure more efficiently. Topics are reinforced by exercises, programming problems, and hands-on projects.

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- New coverage of the rendering equation, GPU architecture considerations, and importance- sampling in physically based rendering
- An emphasis on modern approaches, as in a new chapter on probability theory for use in Monte-Carlo rendering
- Implementations of GPU shaders, software rendering, and graphics-intensive 3D interfaces
- 3D real-time graphics platforms–their design goals and trade-offs–including new mobile and browser platforms
- Programming and debugging approaches unique to graphics development

The text and hundreds of figures are presented in full color throughout the book. Programs are written in C++, C#, WPF, or pseudocode–whichever language is most effective for a given example. Source code and figures from the book, testbed programs, and additional content will be available from the authors' website (cgpp.net) or the publisher's website (informit.com/title/9780321399526). Instructor resources will be available from

the publisher. The wealth of information in this book makes it the essential resource for anyone working in or studying any aspect of computer graphics.

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- Sales Rank: #586900 in Books
- Published on: 2013-07-20

- Original language: English
- Number of items: 1
- Dimensions: 10.25" h x 1.90" w x 8.25" l, .0 pounds
- Binding: Hardcover
- 1264 pages

Editorial Review

About the Author

John F. Hughes is a Professor of Computer Science at Brown University. His primary research is in computer graphics, particularly those aspects of graphics involving substantial mathematics.

Andries van Dam is the Thomas J. Watson, Jr. University Professor of Technology and Education, and Professor of Computer Science at Brown University. Andy’s research includes work on computer graphics, hypermedia systems, post-WIMP user interfaces, including immersive virtual reality and pen- and touch-computing, and educational software.

Morgan McGuire is an Associate Professor of Computer Science at Williams College. He's contributed as an industry consultant to products including the Marvel Ultimate Alliance and Titan Quest video game series, the E Ink display used in the Amazon Kindle, and NVIDIA GPUs.

David F. Sklar is a visualization engineer at Vizify.com, working on algorithms for presenting animated infographics on computing devices across a wide range of form factors.

James D. Foley is a professor and holds the Fleming Chair in the College of Computing at Georgia Institute of Technology. He has also held faculty positions at the University of North Carolina at Chapel Hill and The George Washington University, as well as management positions at Mitsubishi Electric Research.

Steven K. Feiner is a Professor of Computer Science at Columbia University, where he directs the Computer Graphics and User Interfaces Lab and co-directs the Columbia Vision and Graphics Center. His research addresses 3D user interfaces, augmented reality, wearable computing, and many topics at the intersection of human-computer interaction and computer graphics.

Kurt Akeley is Chief Technology Officer at Lytro, Inc. Kurt is a cofounder of Silicon Graphics (later SGI), where he led the development of a sequence of high-end graphics systems, including RealityEngine, and also led the design and standardization of the OpenGL graphics system.

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