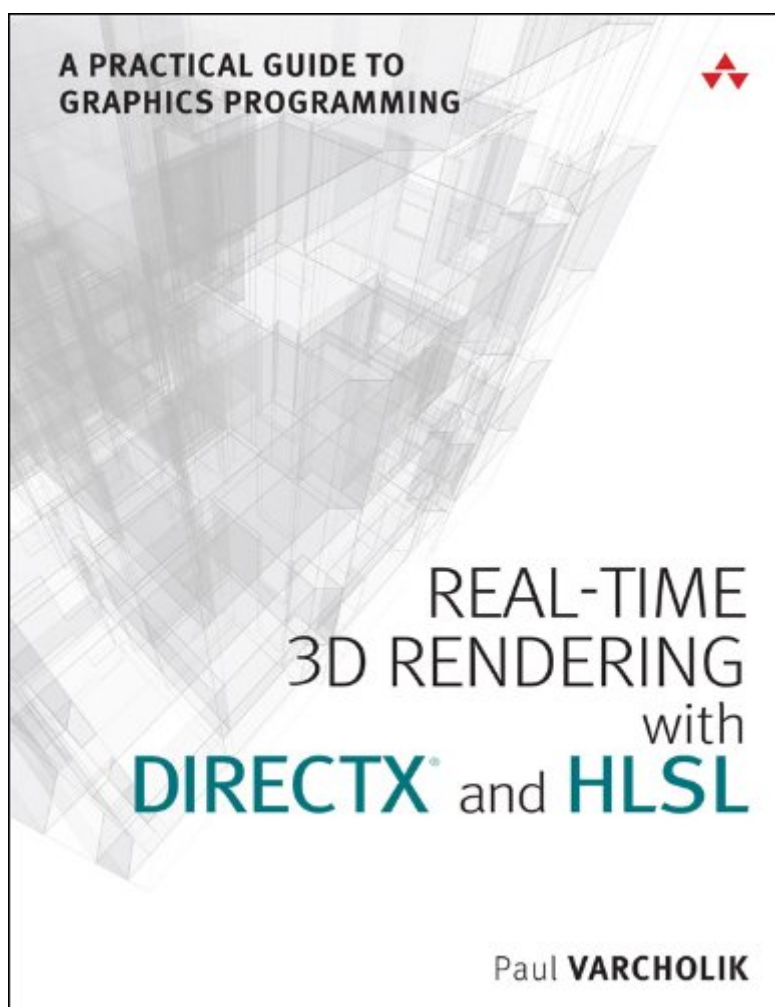


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# Real-Time 3D Rendering With DirectX And HLSL: A Practical Guide To Graphics Programming (Game Design)



## Synopsis

Get Started Quickly with DirectX 3D Programming: No 3D Experience Needed This step-by-step text demystifies modern graphics programming so you can quickly start writing professional code with DirectX and HLSL. Expert graphics instructor Paul Varcholik starts with the basics: a tour of the Direct3D graphics pipeline, a 3D math primer, and an introduction to the best tools and support libraries. Next, you'll discover shader authoring with HLSL. You'll implement basic lighting models, including ambient lighting, diffuse lighting, and specular highlighting. You'll write shaders to support point lights, spotlights, environment mapping, fog, color blending, normal mapping, and more. Then you'll employ C++ and the Direct3D API to develop a robust, extensible rendering engine. You'll learn about virtual cameras, loading and rendering 3D models, mouse and keyboard input, and you'll create a flexible effect and material system to integrate your shaders. Finally, you'll extend your graphics knowledge with more advanced material, including post-processing techniques for color filtering, Gaussian blurring, bloom, and distortion mapping. You'll develop shaders for casting shadows, work with geometry and tessellation shaders, and implement a complete skeletal animation system for importing and rendering animated models. You don't need any experience with 3D graphics or the associated math: Everything's taught hands-on, and all graphics-specific code is fully explained. Coverage includes

- The Direct3D API and graphics pipeline
- A 3D math primer: vectors, matrices, coordinate systems, transformations, and the DirectX Math library
- Free and low-cost tools for authoring, debugging, and profiling shaders
- Extensive treatment of HLSL shader authoring
- Development of a C++ rendering engine
- Cameras, 3D models, materials, and lighting
- Post-processing effects
- Device input, component-based architecture, and software services
- Shadow mapping, depth maps, and projective texture mapping
- Skeletal animation
- Geometry and tessellation shaders
- Survey of rendering optimization, global illumination, compute shaders, deferred shading, and data-driven engine architecture

## Book Information

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## Customer Reviews

The book is great for a novice course . Somebody wrote NVIDIA FX Compose won't work on Windows 8.1, but the book site pointed a version that actually works.The aspects of DX 11 HLSL programming are introduced in a step by step way.The approach is hands on code instead a deep mathematical explanation.This very good for persons with a relative low knowledge in mathematics, besides graphic programming is heavily dependant on mathematics and physics.Is indeed a good option for introductory course.Unfortunately , the instructor materials are difficult to obtain and I need them for a class.Hope I could get it before the classes start.

I just bought digital and printed version of this book. Content looks great but a lot of samples depends on NVIDIA FX Composer that do not works on Windows 8.1.I'm trying to use something different, but...

Great book, detailed chapters, I use this book along with the new game engine architecture by Jason Gregory. In order to code DirectX 11.1 and 11.2 you still need the DirectX 11 foundation.

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