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Pro OpenGL for C# Developers

High-Performance 2D and 3D Graphics for Desktop, Web, iOS and Android

Access the hugely popular OpenGL graphics API in C#, without the need to use C++. Build your own game engine with 2D and 3D support. Target multiple platforms with your next game.

OpenGL is widely considered the industry standard in high-performance graphics for gaming, virtual reality, and visualization. Unlike DirectX, OpenGL can be used on a wide range of platforms beyond Windows, from Linux to iOS and PlayStation Vita. *Pro OpenGL for C# Developers* shows you how to harness this powerful API from your language of choice, C#, and start creating professional-quality games and interactive graphics applications.

The book starts with an introduction to the OpenGL API and a guide to the process involved in rendering graphics, known as the graphics pipeline. You’ll also meet OpenTK, the fully managed wrapper that makes it easy and painless to work with OpenGL in C# (or any other .NET language). Chapters 2 and 3 take you through the process of building your game engine, covering topics like architecture, object-oriented design, and test-driven development in the context of game development. You’ll begin to discover the power of OpenGL, build your first rendering demo, and learn techniques for rendering 2D in 3D, and 3D in 2D! (That is, a 2D world in a 3D game engine, and a 3D scene on a 2D display.)

Further chapters dive deep into specific areas of graphic programming: shaders, particle systems, animation, and path finding. You’ll also learn about sound effects with the Open Audio Library (OpenAL), and how to match them to particle interactions. Each chapter comes with a working demo, including sophisticated projects like building a game editor, and interacting with other game frameworks at the API level. And of course the book wouldn’t be complete without an in-depth discussion on portability, including full demos for iOS and Linux. *Pro OpenGL for C# Developers* will give you the confidence to make the most of what this powerful library has to offer.