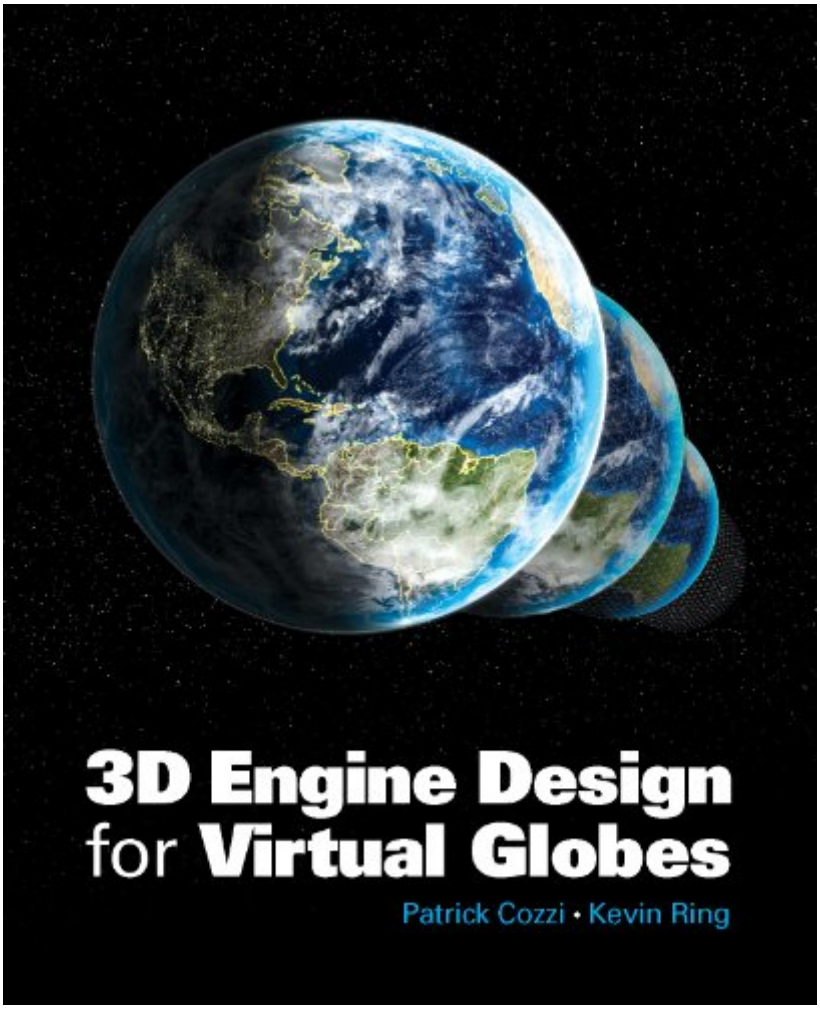
# 3D Engine Design For Virtual Globes



## Synopsis

Supported with code examples and the authorsâ ™ real-world experience, this book offers the first guide to engine design and rendering algorithms for virtual globe applications like Google Earth and NASA World Wind. The content is also useful for general graphics and games, especially planet and massive-world engines. With pragmatic advice throughout, it is essential reading for practitioners, researchers, and hobbyists in these areas, and can be used as a text for a special topics course in computer graphics. Topics covered include:Rendering globes, planet-sized terrain, and vector dataMultithread resource managementOut-of-core algorithmsShader-based renderer design

## Book Information

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## Customer Reviews

If you don’t want to read my short novel below, just buy the book!As a lifelong amateur astronomer and software engineer, with 3D graphics simulation being my hobby, I always wanted to write a 3D simulation allowing a user to fly around the solar system and buzz the canyons of our rocky planets or navigate through the rings of Saturn.But even with many years of OpenGL programming, I had no idea how to achieve what I have conceived in my head (check out the Outtera website to get an idea, absolutely stunning!). 3D Engine Design for Virtual Globes is just what I needed. The book

presents a complete API for rendering globes, massive amounts of terrain, vector data (GIS) and the techniques required for a seamless and smooth transition from orbit down to your front yard.The API is called OpenGlobe and it is built on top of OpenTK which facilitates writing OpenGL programs with C#/.Net (yeah!).To end on a good note, Iâ ™ll mention the conâ ™s first:I canâ ™t praise this book enough for finally making this topic clear to me. With that said, be forewarned: The OpenGlobe API is not a plug-n-play solar system/planetary simulator. Literally all of the example programs demonstrate their purpose in isolation to the example. For example, the globe rendering examples render a single globe in its own space. If you want to render several planets, you will need to rip out the globe rendering example code and roll your own multi-planet solar system.This also means there is no scene management. But the authors do gloss over multi-frustum rendering for large volume scenes that cover distances from one meter to 100,000,000 meters or more.