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Vue 7

From the Ground Up

Ami Chopine
Vladimir Chopine

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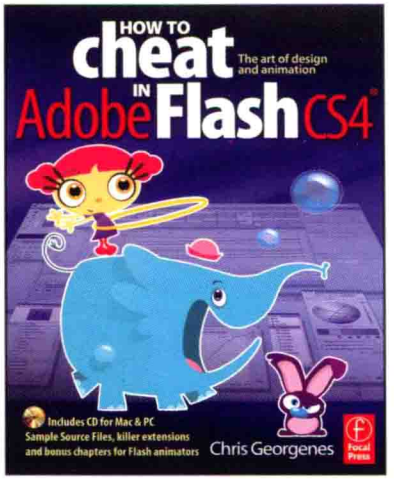

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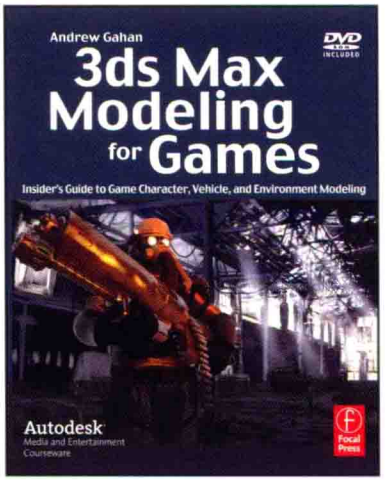

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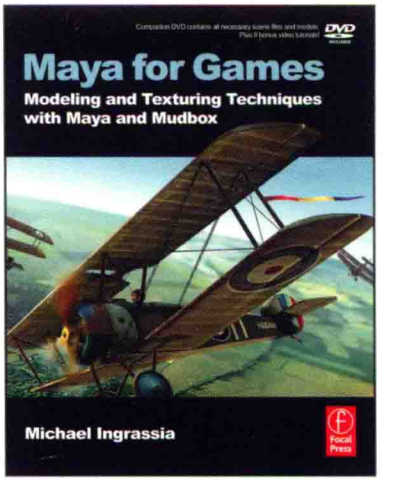

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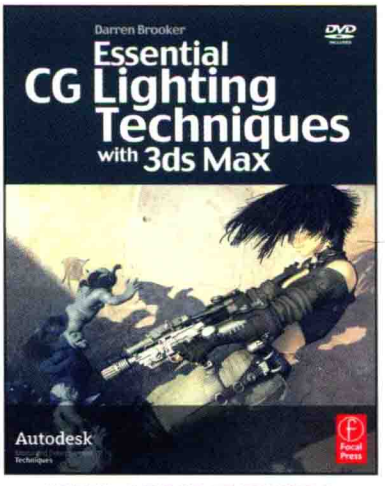

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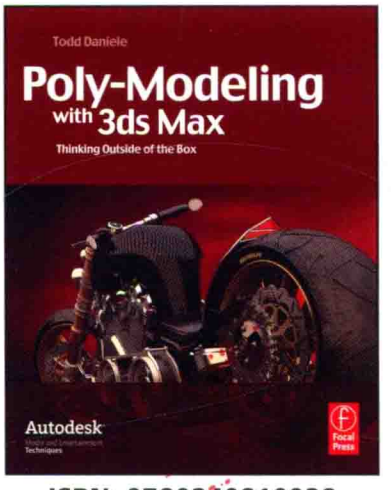

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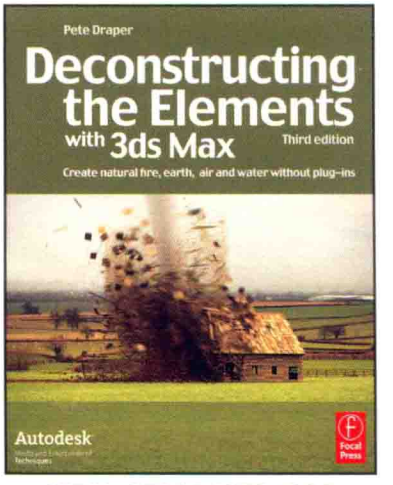

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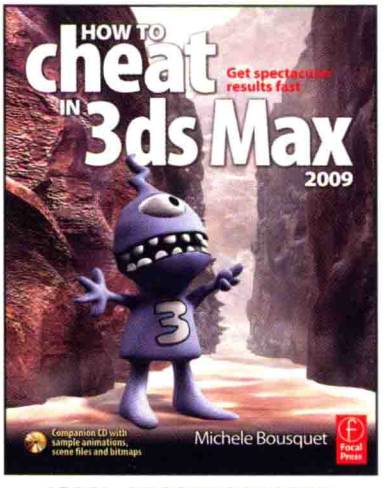

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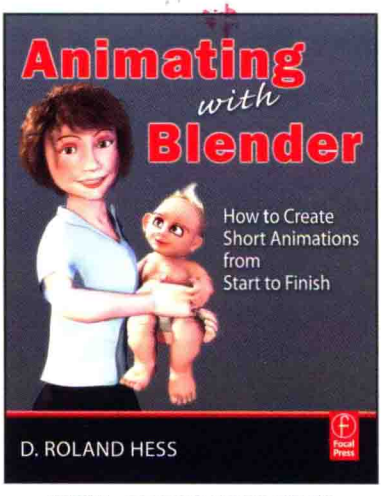

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Dedicated to Judy Ostermiller, who has always believed in her students.

Preface

Vue is quickly being recognized by professional and lay persons alike as the best software on the market for producing natural, animated environments. You've probably seen the lush and realistic backgrounds of such blockbuster films as *Pirates of the Caribbean*, *Indiana Jones and the Kingdom of the Crystal Skull*, and *Spiderwick*. All of these were created using Vue.

Vue has an easy-to-use interface that makes the concept-to-image process intuitive and enjoyable. You can have an idea, sit down, and within short hours have an image you'd like to hang up on your wall. If you're a professional with a three-dimensional (3D) application you already love, Vue can work right alongside it providing its power with atmospheres, terrains, material creation, and more. This book will guide you through everything you need to know to create stunning artwork and animation.

When working with Vue or any 3D program for that matter, the best way to get realistic results is to study reality. Check out photographs of land formations, clouds, plants—anything you intend to bring into the scene. Even if you're creating cartoon animations, knowing how nature really looks can help craft caricatures that look fantastic. A good example of this is in the movie *Kung Fu Panda*, where many of the backgrounds were created using Vue.

This book starts out with a basic explanation of the interface and the environment you'll be creating in. After that, it begins, literally, from the ground up with terrains and moves you through basic to advanced operations with each aspect of creation. Even if you intend to integrate Vue with an application like Maya, knowing how Vue works in stand-alone mode will give you the expertise to use it to its fullest strength as a plug-in and raise your artwork to new heights. At the end of each chapter is a tutorial applying some of the information so that you can quickly become proficient.

The tutorials are designed to be stand-alone sessions; that is, you will be able to do them even if you didn't read the chapter before. There will be several files you'll need for some of the tutorials, and you can find them at the book's companion web site, *www.vue7fromthegroundup.com*. In addition to these assets, you'll find several more video tutorials further exploring Vue, useful quick references, a reader gallery, a community, and other goodies.

There were several artists involved in creating the opening images for the chapters. More information about them and a small gallery of more of their work can also be found at the web site.

You can read this book cover to cover, read just a few parts to fill in some gaps, do just the tutorials, or use it as a reference. Any way you use it, we hope you'll find *Vue 7 from the Ground Up* to be a must-have book to help you bring your dreams to fruition on the screen. This book is only a guide to using a great tool. The art is in you. Enjoy.

Acknowledgments

Usually in the Acknowledgments, one of the most important persons thanked is the author's spouse (or partner). Well, since we (the coauthors) are married that would be like thanking ourselves. Even so, it has been great fun sitting right next to each other working on this project. We'd like to thank Chris Simpson for giving us the opportunity to share our knowledge of Vue with others.

Early on in the writing, Peggy Walters got involved as our technical editor. Not only did she point out technical gaffs, she helped clean up the text. Her cheerfulness and quick responses made it a joy working with her. This book is much better because of her hard work.

We'd also like to thank the community at Cornucopia3D. There were several times when questions were asked and answered that helped clarify Vue's inner workings to us. A few people in particular posted online tutorials that helped fill the gaps. Those were Steve James (Silverblade), Mark Caldwell, and Paul Fitzgibbon.

And of course, there is the great team at e-on Software who created Vue and kindly worked with us on several details.

Last, but not least, we'd like to thank our great children who had to deal with parents who sometimes seemed connected to the computer by umbilical. They were by far the most inconvenienced, but remained (mostly) patient and always helpful through it all.

The Artists

Dominic Davison, from the United Kingdom, has been a freelance digital artist for around 5 years. He primarily creates natural landscapes in Vue, focusing on classic landscape paintings of the 16th, 17th, and 18th centuries.
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Woodland Waterway, Chapter 5
Autumnal Walk, Chapter 7

Luigi Marini (nickname raffyraffy) lives near Rome, Italy, with his wife and three sons. His main studies were in nuclear physics, but his great love is cartoon and cinema arts. He's been a digital artist for 13 years.
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Mountain Village, Chapter 6
Happy Little Farm, Chapter 9

Gary Miller, a tutorial instructor at Geekatplay, learned 3D art from online tutorials and now loves to use his knowledge to help others have fun and create models and scenes with ease.
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Morningside, Chapter 15
Arctic Precipice, Chapter 19

Artur Rosa has been creating digital artwork for 2 years, using Vue with passion to crystallize the images in his mind. He lives near the sea in Portugal with his wife and son.
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Sic Transit Gloria Mundi, Chapter 8
Somewhere in the Centaurus Constellation, Chapter 13

Chipp Walters is an award-winning industrial designer, 3D digital artist, and software programmer. Specializing in Vue modeling, he is the creator of several Vue plug-ins and the author of tutorials on modeling.
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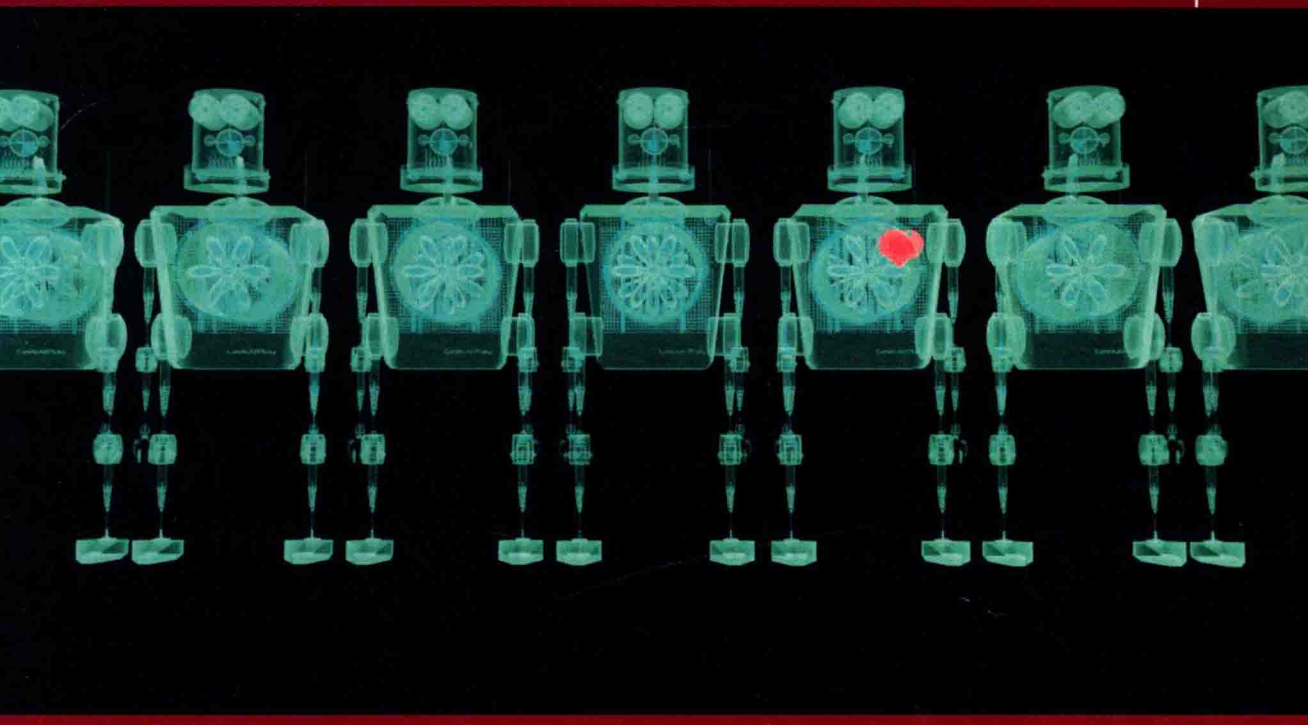
Cloud Carrier, Chapter 12
Who's Going First?, Chapter 18

Contents



The Interface

If you're new to Vue, you'll find that the interface is very intuitive. Although this chapter doesn't go into much detail about each Vue tool you should come away with a solid grasp of the layout and a basic understanding of what the tools are and their potential.

If you're familiar with Vue, you may wish to skim this chapter, if only to familiarize yourself with the terms used in the rest of the book. Otherwise, feel free to move forward to other chapters.

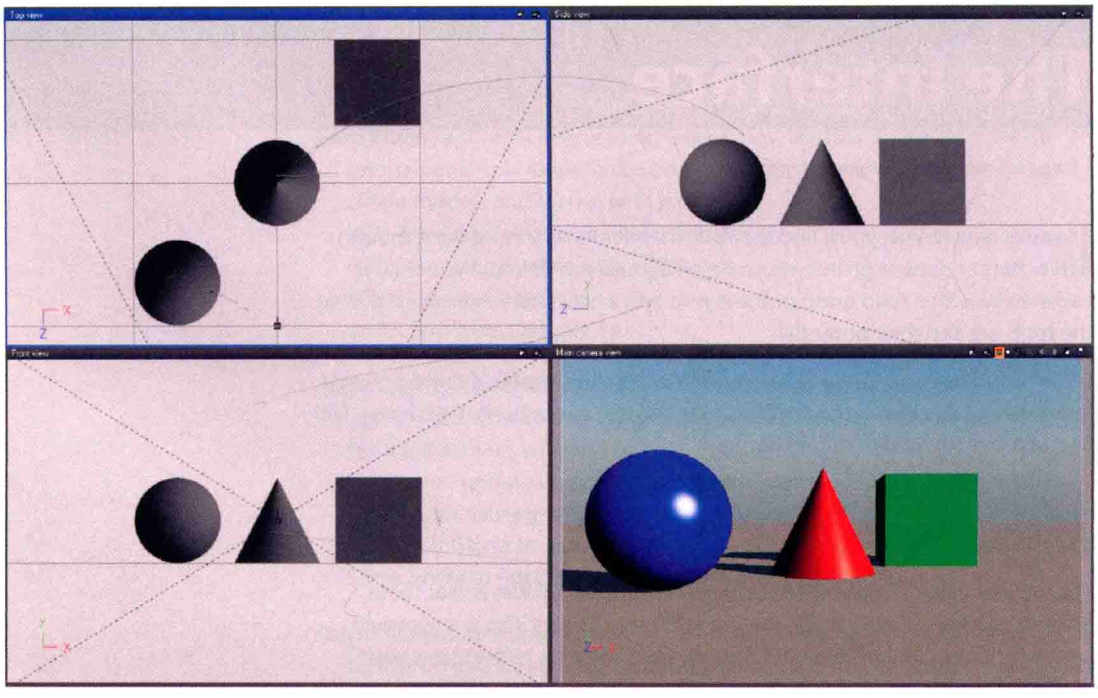
At First Sight

The most obvious thing you'll notice when you open up Vue is that there are four windows showing a scene from different angles. This is a common layout for three-dimensional (3D) applications. You'll be able to view your scene from the top, side, front, and what the camera sees. As you become familiar with the environment, you'll find it makes it very easy for you to see and manage the arrangement of everything that is in your scene.

By default Vue uses OpenGL, an industry-standard graphics library to quickly draw representations of your scene in the four different view windows.

Typically, this runs using your hardware drivers. However, sometimes the version of OpenGL in your computer and the one used in Vue aren't compatible. In this case, you can switch to OpenGL that is driven by the software rather than your hardware, or even leave OpenGL behind by choosing a wireframe view. You can access these options through File > Options > Display Options; you'll find them in the upper left corner. In this book, OpenGL will be used and the four window views will be referred to as OpenGL views.

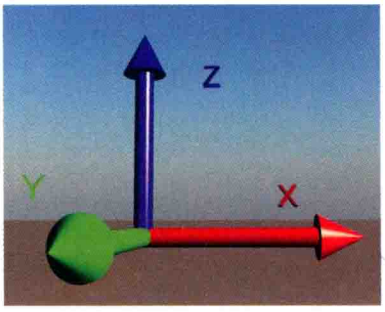
Only the camera view will show your scene with perspective. All the other OpenGL views are orthogonal, which means that distance will have no effect on what you see. Not only will there be no blurring in the distance, size will be shown objectively and without regard to how far away the object is. For an example, let's use a small sphere and a large sphere. You've arranged the small sphere directly in front of the large sphere, so that in the camera view you can only see the small sphere. This is pretty intuitive, because it is how the real world works. However, you notice in the front view that you see the larger sphere behind the small one. This orthogonal view is imaginary, but it gives you the great advantage of being able to see each sphere's absolute size and exact placement.

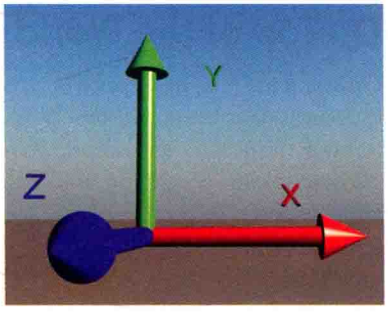


In this figure, you see in the top view that these figures are placed so the sphere comes before the cone, which comes before the cube, and that they are also displaced along the X axis. However, the objects appear to be in perfect alignment in the front and side views because of their orthogonal view. It is in the camera view where you see the effects of perspective, showing not only smaller shapes in the distance but also an appearance of being off center in the camera's field.

The Coordinate System

In the Vue environment, the world has a center from which the position and orientation of everything are measured. The three axes that make up the coordinate system—height, length, and depth—originate from this point at right angles to each other. This center of the world is also called the point of origin. The coordinate system that originates from this center is the world coordinate system. Objects also have their own center and coordinate system. The relationship between the object and world systems affects how you must manipulate your objects as well as how materials will apply to them. For more detail about this, refer to Chapters 6 and 8.





By default in Vue, Z corresponds to the axis pointing up, meaning the one that represents height; X represents length; and Y represents depth. However, many 3D applications use Z as their depth and refer to the effects of perspective as Z depth. You can make this change in Vue by going to File > Options; select the Units and Coordinates tab (if you're using Vue 6, select the General Preferences tab instead) and there you can toggle between "Y axis up" or "Z axis up." Select "Y axis up"; this will make X the length and Z the depth.