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Maya for Games

**Modeling and Texturing Techniques
with Maya and Mudbox**



Michael Ingrassia



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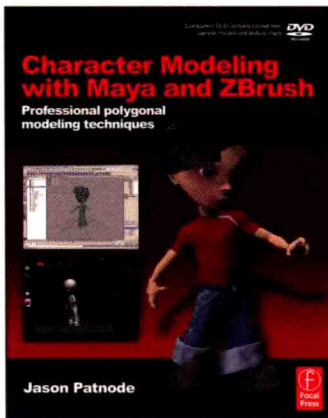
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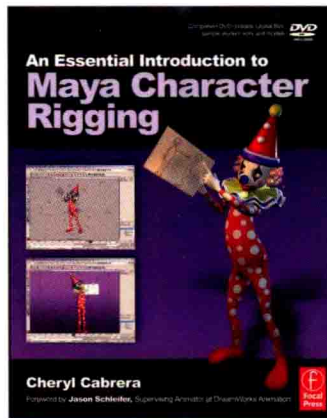
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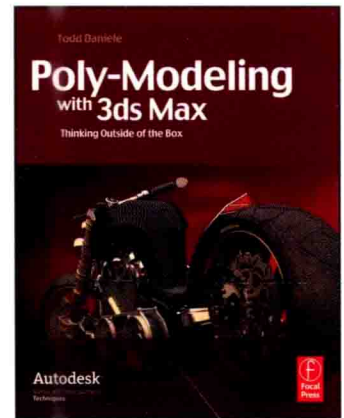
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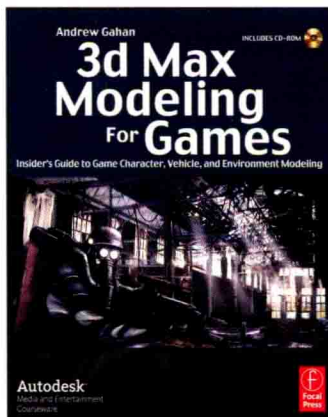
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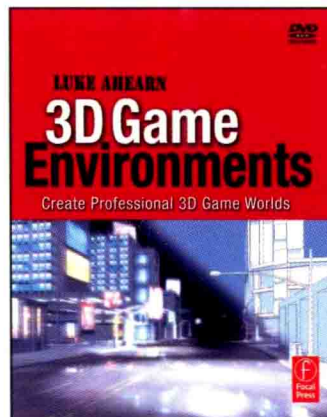
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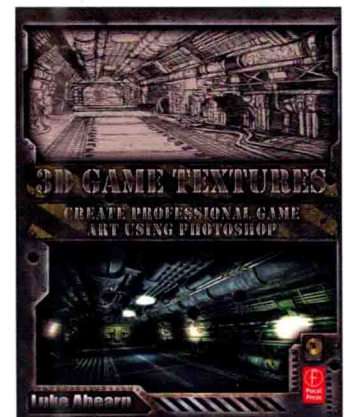
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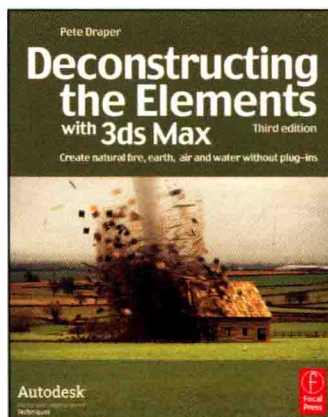
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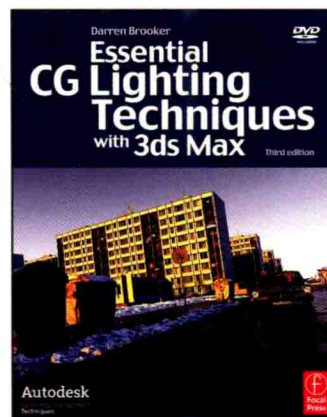
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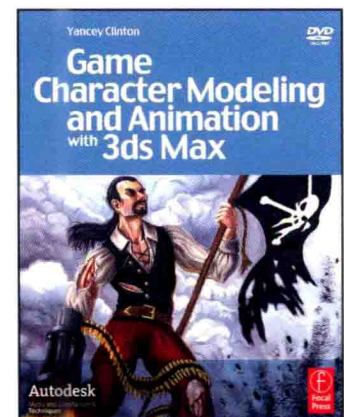
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Praise for *Maya for Games*

"In the constantly changing world of 3D game development, this is the best book yet for anyone looking to get into 3D modeling for the gaming industry. *Maya for Games* is like having a game artist sitting right next to you!"

—Sky Kensok, Partner and Founder WXP, Inc.

"Whether you are a novice or veteran artist in the industry, *Maya for Games* comprises tricks and techniques that are certain to improve your workflow."

—Duane Molitor, Microsoft Games Studio

"This is a great '3D Artist Bible' and an awesome reference for learning and retaining the intricacies of Maya's robust tools!"

—Tim Toulouse, QA Lead, Microsoft Game Studios

Maya for Games

Acknowledgments

I would like to take a moment to thank the Focal Press staff, in particular Laura Lewin, Chris Simpson, and Georgia Kennedy, for their assistance and for providing me the opportunity to create this book.

Thanks to my good friend Alan, whose Maya expertise and professionalism is unsurpassed.

Finally to my Uncle Robert, who nurtured my artist skills from an early age, taught me to never be satisfied with my work, and encouraged me to always strive to do better on the next project. His mentoring has helped make me the artist I am today.

Introduction: Why I Decided to Write This Book

Welcome

Thank you for choosing, in my opinion, one of the best books available for next-generation modeling and 3D game art techniques. I would like to take a moment to say a few words regarding the purpose of this book (or, as I would call it, training courseware) and what you can expect to learn from it. Many years ago when I was new to 3D and learning Studio Max, I came across a book I found incredibly enlightening as each chapter took me deeper into an original underwater scene. I came away having learned a great deal from that book and to date have not found another like it. As a veteran 3D artist and professional Maya instructor, I have been longing for a well-structured book on Maya modeling to use as a training aid for my students. Additionally, for some time now, other instructors have echoed the same desire. So when the opportunity came before me to write this book, I was excited for the chance to create something special for educating 3D artists.

Why I Prefer Working in Maya

Maya, as is true of any 3D application, is simply a tool—a powerful tool, but nonetheless just a tool. Put a paintbrush in the hands of Michelangelo and he'll paint the ceiling of the Sistine Chapel. Put the same paintbrush in the hands of someone less skilled, and he'll paint his house. It's the user's skill, not the tool, that makes great 3D art.

I bring this up because regardless of the 3D program you prefer, the knowledge and skills you gain from this book will make you a better 3D artist. But what makes Maya so desirable for many 3D artists is its ease of use, customization capabilities, and therefore speed. Custom tool shelf, MEL or Maya Extended Language scripting, and keyboard shortcuts are the heart of Maya's power.

Once you become comfortable using Maya, you will build on a series of customized tools on a daily basis. These tools and customization capabilities are what make Maya so comfortable and attractive to use. It is a powerful program that will become a pleasure to use more and more as you become familiar with how it works and gain a better understanding of its potential.

So moving forward, keep in mind that the goal of this title is to train a wide range of people with varying skills and 3D desires. At the end of the book, I can assure you that all users will have a stronger understanding of the many 3D processes used in the game and film industries, processes I have used for the past decade on a daily basis.

Go Ahead and Jump Right In

So roll up your sleeves and jump right in! Don't be afraid to make mistakes, because you will. We all do. Even with my years of experience as a professional 3D artist, I am constantly learning and understanding how I can "make it better" the next time around. That's why 3D modeling is so much fun, because it is consistently challenging. Give it your best shot, and don't be afraid to scrap your model and start over. Remember, you are here to learn. What you might enjoy knowing is that I had many friends, both experienced 3D artists and others who were new to 3D and Maya software, work through these projects. They provided me with valuable feedback on areas that needed more explanation or additional screenshots. I truly feel this book is one of the best available on 3D modeling and will become a favorite you'll want to keep on your work desk.

And if you get in a jam, feel free to send me an e-mail and ask any questions you might have. I would be glad to help you through your problem-solving process.

Happy modeling!

Michael Ingrassia
3D Industry Veteran
www.MayaInstructor.com

How to Use This Book Effectively

The following comments are worth reading, especially if you are just flipping through this book at the bookstore. This page will give you a great understanding of my teaching philosophies and methods to my madness.

What This Book *Is Not* About

First, what this book *is not* about. This book was *not* designed to be a complete bible of all the tools and abilities within Maya. It isn't intended to be about all modeling tools or techniques available either. Maya is a deep and diverse application. Many tools and abilities lie in its power, but to discuss them all here would take up half, if not more, of the pages in this book and be completely boring to the user outside of serving as a reference to what each tool is capable of doing. Therefore, it would be a great disservice to include too much information on tools that won't be necessary on the projects within this book and, quite honestly, on tools I have not been required to use in my professional career as a 3D game artist.

Progressive Modeling and Lessons

As we progress through the book, my explanations will slowly allow you to think and work on your own. In the beginning you will find my instruction to be detailed and meticulous, but to avoid redundancy I will mention tools but not describe where they are located because you will already know where they are by this point. This is why it is so important that you work through this book from beginning to end in a linear fashion. Don't think of this book as a random guide but as an in-classroom course where you are following my instruction on a daily basis. In the end, those who follow my direction will come away with a strong understanding of Maya, modeling, and 3D technique.

Working in Different Versions of Maya?

Three words: custom tool shelf. At the time of this writing, users of this book will find that all of the tools and techniques I will show apply to any version of Maya up to 2008. Because we will be making a custom tool shelf, all of the necessary tools we require will be at our disposal regardless of where they are within the Maya menus. Some features have been changed or moved in the updated versions, but not so much as to cause confusion or to outdate this book anytime soon. My goal was to create a well thought out training course within this book, and I feel I have successfully done so.

Working in Another 3D Application?

If your 3D application happens to be other than Maya, no worries either. Many of the tools I use in Maya are similar to tools available in other applications such as Max. The tools may have different names, but most perform the same or similar functions. Give the book a try. I know you will find it helpful and a great resource for many techniques related to 3D in general.

Simplifying Redundancy

Another reason to work from the beginning to the end with this book is to avoid repeating the same tools and techniques. With each new lesson I add more tools and methodology, but I also deliberately avoid the same “click here and do that” directions. By the end of this book you will notice the lessons become less about telling you what to do every step of the way and focus instead on showing you where to go with the new skills you are acquiring. More experienced 3D users will find in these lessons a refreshing opportunity and change of pace.

So Who Is This Book For?

If you are a beginner, then you're in luck! This is one book that will be on your desk for quite some time, as the techniques presented here will help you grow as an efficient modeler.

But if you are an intermediate to advanced 3D artist, rejoice! I have been asked repeatedly why all of the books in today's market keep mulling over the same boring basics. I couldn't agree more. That's why when I set out to write this book, I knew I had many great techniques to draw from that I have learned and honed over the past decade working at various major studios. Think of this book as a treasure trove of unique and aspiring approaches for making your life as a modeler go much smoother and maybe even more fun too.

I promise you, this will be one book you guard like a watchdog. Coworkers or fellow students who stop by your desk and pick it up to check it out will get a vicious snarl—well, that's my dream anyway!

So enjoy and please feel free to check out my personal website where I will have much information about myself, my work, and, soon, many free tutorials and models for those of you who have purchased this book.

Why the World War I Theme?

Why Did I Chose World War I for the Subject Matter?

I could have chosen just about any subject or style in writing this book. Many ideas crossed my mind, from cyber-stealth warfare like *Crysis* to cartoonish style *Jak and Daxter*, but I wanted to give the users of this book some unique challenges. First, most games today involve some form of warfare or gun battles—something I'm not entirely happy about, but we'll keep politics out of the equation. The truth is, when you begin your career as a 3D artist, chances are the game you will be working on will involve some form of character shooting a weapon. From a design standpoint, there is a beautiful, simple aesthetic quality about WWI. The shape of the "doughboy" soldier helmet has always intrigued me, and I felt the fashion style of this era would be a fresh and creative direction for modeling. Also, the thought of teaching how to create a Sopwith Camel biplane, made infamous when WWI ace pilot Arthur Roy Brown successfully shot down Baron Manfred von Richthofen, also known as "The Red Baron," was simply too good to pass up. Besides, World War II has been covered enough in many games, but WWI hasn't.

What to Expect by the End

The second reason I chose to focus on WWI was to provide users the opportunity to create and display some unique game model assets on their show reels. As an instructor, I have seen my share of 3D books demonstrating all too often an alien spacecraft, a poorly executed game character, or, worse, how to model a hammer or a wine glass. These are boring, overdone, and useless when trying to impress a game studio that you have what it takes to enter the gaming industry. By the end of this book, you will have created many of the assets required to assemble a WWI scene or game level. You will also learn how to show off your models to prospective employers in Bonus [Chapter 13](#), when I show you how to create impressive 3D model turntables for a killer show reel. I hope you find this book as much fun to read as it was to write.

Contents

Acknowledgments	xvii
Introduction: Why I Decided to Write This Book	xviii
Why I Prefer Working in Maya	xviii
How to Use This Book Effectively	xx
So Who Is This Book For?	xxii
Why the World War I Theme?	xxiii
 Chapter 1: Maya Fundamentals: User Interface	1
Maya Fundamentals: Preferences Settings	3
Setting Custom Preferences	3
Center to Whole Face Selection	3
Attribute Windows	4
Unlimited Undos	5
Turn on Border Edges Highlight	6
Plug-In Manager	6
Maya Fundamentals: Hot Keys	7
Hot Keys	7
Maya Help	7
Maya Fundamentals: Creating a Custom Tool Shelf	8
Brief Description of Each Tool's Function	8
Creating a Custom Tool Shelf	9
How Your Shelf Should Look after You Add the New Tools	11
Here Is Where Each Tool Is Located in Maya 2008	11
Changing Tool Names	12
Maya Fundamentals: Setting up a New Project	12
Step 1	12
Step 2	13
Step 3	13
 Chapter 2: The Stone Archway	15
What We'll Learn	15
Before Beginning	15
Step 1: Getting Started	15
Why Are We Copying and Pasting?	16
Step 2: Preparing the Modeling Template	17

Creating a New Template	17
Creating a New Layer	17
Creating a New Shader	18
Creating a Template Map Shader	19
Applying the Shader to Template Mesh	21
Duplicating the Template	22
Begin Modeling	23
Extruding Faces	25
Step 3: Creating the Arch.	28
Splitting Vertices	28
Step 4: Mirroring the Geometry	33
Completing the Model.	33
Mirror Geometry	34
Merging Vertices	35
Snapping Points	37
Combining Meshes	38
Using the Append to Polygon Tool	39
Finishing Up	39
Step 5: Applying Planar UV Projection	40
Applying UVs to the Finished Archway	40
Applying the UV Coordinates	40
Duplicating a New Shader	41
Creating a New Shader	41
Applying the Shader Map	41
Not Perfect but	42
Why We Are Now Finished	43
Chapter 3: The Broken Archway	45
Preparing the Template Image	45
Setting up the Project and Template	46
Preparing Shaders for Modeling	47
Step 1: Begin Modeling	47
Using the Create Polygons Tool	47
Combining the Shapes	48
Step 2: Finalizing the Wall Face	50
Splitting Vertices	51
Finishing the Base Wall	52
3's, 4's, 5's...Oh My	52

Applying the UV Coordinate	53
Extruding the Wall	54
Adding Basic Details	55
Creating the Texture Map Shader	55
Continuing with Finer Details	56
Step 3: Preparing the UVs	56
Explaining the Following Process	56
Completing Our UV Layouts	56
Fixing Incorrect Faces	57
Isolating the New UVs	58
Step 4: Adding More Details	60
What about the UVs?	60
Breaking up the Mesh	60
Moving Forward: Repairing the UV Shells	63
Happy, Happy, Joy, Joy	63
Quick Selecting Faces	64
Organizing All of the Cracks	65
Finishing the UV Layout	66
Chapter 4: The Springfield Rifle	69
What We'll Learn	69
What Is LOD, and How Do I Determine Poly Count?	69
Knowing Your A's, B's, and C's	70
Hitting the Highs and Lows Is Key	71
They'll Let You Know	71
Getting Started	71
Step 1: Begin Modeling	72
Adding Dimension	73
Mirroring the Geometry	75
Using Deformers to Quickly Shape Objects	75
Applying Texture for Inspecting the Mesh	77
Finishing the Low-Poly Model	78
Using Your Judgment	79
Practice Makes Perfect	79
Adding Further Details	80
Step 2: Applying UVs to the Finished Rifle	80
The UV Editor Window	80
Preparing the Rifle UV Layout	81

The Good, Bad, and Ugly of the Move and Sew Tool	83
What to Do?	83
Separating the Rifle into Smaller Pieces	83
Mirroring the Rifle Geometry	87
Fixing the UV Map	87
Using the Move and Sew Tool	88
Step 3: Blocking Out for Texturing	88
Base Texture Map	88
Creating a UV Snapshot	88
Creating the Block-Out Map	89
Adding Detail and Realism to the Texture Map	90
Chapter 5: Fake Camera Projection Modeling	93
Why Fake the Camera Projection?	94
The Reality Is.....	94
Step 1: Getting Started	94
Preparing the Template Image	94
Starting the Scene Setup File	95
Step 2: Setting up the Camera	96
The Camera Setup Process	96
Step 3: Begin Modeling	96
Creating a Poly Cube	96
Extruding the Roof Faces	98
Creating the Tool Shed	99
The Final Wall	103
Fixing Other Walls	103
Creating the Garage Doorway	103
Reviewing Your Progress	104
Cleaning up the Garage Floor	104
Step 4: Building the Windows	104
Extruding the Roof	106
Using the Cut Face Tool	106
Fitting the Windows in Place	108
Viewing Your Progress	109
Step 5: Projection Mapping the Mesh	110
Applying a Camera Projection UV	110
Fixing the UV Proportion	110
Changing the UV Image Ratio	111