Table of Contents

Foreword	XX
Chapter One Introduction	2
What Is Digital Modeling?	4
Who Can Become a Professional Digital Modeler?	5
Who Should Read This Book?	7
What Can You Expect from This Book?	8
What You Should Know	9
What You Will Need	10
RAM	10
CPU Speed and Number of Cores	10
Graphics Card and GPU	11
Two Monitors	11
About This Book's Approach to Software	13
Software Requirements	14
3D Software	14
2D software	15
What's on the Disc	15
A Final Word: Change Your Thinking	16
Chapter Two Understanding a Modeler's Role	20
Production Pipelines: Stages of Production	22
Stage 1: Pre-production	25
Story	25
Visual Design	28
Storyboard	33
Audio: Scratch Voice Recording	35
Animatics	37
Audio: Voice Recording	39

Stage 2: Production	. 40
Modeling	40
Rigging	43
Scene Setup	45
Texturing	48
Animation	50
Effects	53
Lighting	56
Rendering	59
Stage 3: Post-production	61
Compositing	61
Audio	64
Final Edit and Delivery	67
Evolution of Production Pipelines	68
Virtual Art Department (VAD)	69
Stereo Department	72
Chapter Three Preparing for Modeling	76
Tools of a Digital Modeler	78
Reference	78
Observation	81
Problem Solving	82
Gathering Reference Material	84
Physical Reference	84
Digital Camera	85
Tape Measure	86
Sketchbook	87
Digital Reference	89
Printed Reference	89
Movie Reference	90
Note on Copyrighted Material	91
References to Avoid	91

Preparing Reference Material	96
Scan or Transfer	96
Adjust Color and Levels	96
Rotate, Size, and Crop	97
Composite	98
Rename and Organize	99
Chapter Four Fundamentals of a Digital Model	100
A Model's Anatomy	102
Points	102
Vertex Maps	103
Edges	107
Polygonal Models	108
NURBS	109
Subdivision Surfaces	112
Model Classification: Hard Surface and Organic	113
Production Driven	113
Attribute Driven	114
Construction Driven	114
Model Classification Evaluation	114
Model Styles	117
Photo-real	118
Stylized	118
Choosing a Style	118
Chapter Five Digital Modeling Methods	120
Build Out	122
Point by Point	123
Edge Extend	123
Primitive Modeling	124
Box Modeling	126
Patch Modeling	127
Digital Sculpting	128
3D Scanning	131

Modeling with Texture and Animation Tools	134
Texture Displacement	134
Bones	135
Dynamics	136
The Importance of Mixing Methods	138
Chapter Six Professional Modeling Practices	140
Naming Conventions and Directory Structure	142
Content Directory	142
Naming Conventions	145
Don't Agonize, Organize	147
Clean Modeling	147
Polygon-count	148
Topology	153
Preparing a Model for Production	159
General Production Preparation	159
Texturing Preparation	160
Rigging Preparation	162
Chapter Seven Polygonal Modeling	166
Modeling 3D Polygonal Text	168
Vector and Raster Images	169
Getting Started	170
Creating the 2D Base Mesh	170
From 2D to 3D	174
Micro-bevels, Chamfers, and Fillets	174
Clean Up	177
Modeling a 3D Polygonal Object with Seams	180
Getting Started	182
House Cleaning	185
Layout Foundations	186
Final Stages	190
Goooal!!!	195

Chapter Eight Subdivi	sion Surface Modeling	196
Modeling 3D Text with S	SubDs	198
Getting Started		198
Adding Support Edg	es	199
Patching in Polygon	s	201
Adding Depth		203
Adding Detail		204
Modeling a SubD Object	t	205
Reference		205
Getting Started		206
Creating the Metal S	Spring	209
Chapter Nine Modelin	g a Realistic Head	212
Choosing a Method: Edg	ge Extend vs. Box Modeling	214
Using Reference	-	216
Preparing the Backg	round Templates	217
Taking Advantage of	of Symmetry	218
Modeling the Head's Co	omponents	219
Eyes		219
Nose		225
Laugh Line		228
Mouth		228
Jawline		231
Ears		232
Finishing Off the H	ead	234
Chapter Ten Modeling	g a Stylized Character	238
Box Modeling a Charac	ter Mesh	240
Getting Started		242
Detailing the Face		247
Building the Body		253
Give 'em a Hand		
Final Character Review		262

Chapter Eleven	Product Modeling for Print Graphics	264
Building a Better Product		
Reference: CAI	Geometry, Photos, and Blueprints	268
Getting Started	: Creating Splines	270
Spline Patching	g .	272
Final Details		278
Chapter Twelve	Digital Sculpting	280
Digital Sculptin	ng with Glen Southern	282
Creating a Digi	tal Creature Maquette	284
Sculpting L	egs	286
Sculpting A	Arms	288
Sculpting the	he Head	289
Second Pass over	er the Sculpt	292
Detailing		294
Chapter Thirteen	Game Modeling	298
Next-Gen Gam	ne Modeling with Glen Southern	300
Creating the Cr	reature Sculpt	300
Performing Ret	opology to Create the Game Model	305
Creating UVs f	or the Low-Poly Model	314
Generating Ma	ps for the Low-Poly Model	315
Color Map		315
Bump Map		317
Normal Ma	ıp	318
Chapter Fourtee	an 3D Printing of Digital Models	320
3D Printing Ov	verview	322
3D Printing Ap		328
Preparing a Dig	ital Model for 3D Printing	329
Using Clos	ed Meshes	329
Avoiding T	exture or Displacement Maps	330
Getting the	e Right File Format	331
Guidelines	for 3D Printing	332
From 3D Printi	ng to Manufactured Toy	334

Chapter Fifteen Getting a Job in Digital Modeling	342
Overview of the Industry and Markets	344
Film	344
Television	350
Games	353
Visualization	356
Print Graphics	360
Demo Reels	361
Demo Reel Case and Sleeve	361
Demo Reel Content	365
Demo Reel Length	368
Demo Reel Audio	368
Demo Reel DVD Burning and Labeling	369
Personal Site	370
The Seven Deadly Job Search Sins	374
Sin #1: Homesickness	374
Sin #2: Greed	375
Sin #3: Inflexibility	376
Sin #4: Putting All Your Eggs in One Basket	377
Sin #5: Sloppiness	378
Sin #6: Playing Hard to Get	378
Sin #7: Sloth	379
Get a Job!	380
Staying Current	380
Skill Set	380
Software	381
Networking: Online Communities	382
Staying on Top of Industry Trends and News	384
Reel and Resume	385
Health	386
Advancing in Your Career	387
Final Thoughts	390
Index	395