

OpenGL® ES™ 3.0

Programming Guide

Second Edition



Dan Ginsburg ■ **Budirijanto Purnomo**

With Earlier Contributions from **Dave Shreiner** and **Aaftab Munshi**

Foreword by **Neil Trevett**, President, Khronos Group

Praise for *OpenGL® ES™ 3.0 Programming Guide, Second Edition*

“As a graphics technologist and intense OpenGL ES developer, I can honestly say that if you buy only one book on OpenGL ES 3.0 programming, then this should be the book. Dan and Budirijanto have written a book clearly by programmers for programmers. It is simply required reading for anyone interested in OpenGL ES 3.0. It is informative, well organized, and comprehensive, but best of all practical. You will find yourself reaching for this book over and over again instead of the actual OpenGL ES specification during your programming sessions. I give it my highest recommendation.”

—Rick Tewell, Graphics Technology Architect, Freescale

“This book provides outstanding coverage of the latest version of OpenGL ES, with clear, comprehensive explanations and extensive examples. It belongs on the desk of anyone developing mobile applications.”

—Dave Astle, Graphics Tools Lead, Qualcomm Technologies, Inc., and Founder, GameDev.net

“The second edition of *OpenGL® ES™ 3.0 Programming Guide* provides a solid introduction to OpenGL ES 3.0 specifications, along with a wealth of practical information and examples to help any level of developer begin programming immediately. We’d recommend this guide as a primer on OpenGL ES 3.0 to any of the thousands of developers creating apps for the many mobile and embedded products using our PowerVR Rogue graphics.”

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OpenGL[®] ES[™] 3.0 Programming Guide

Second Edition

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The OpenGL graphics system is a software interface to graphics hardware. (“GL” stands for “Graphics Library.”) It allows you to create interactive programs that produce color images of moving, three-dimensional objects. With OpenGL, you can control computer-graphics technology to produce realistic pictures, or ones that depart from reality in imaginative ways.

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Contents

List of Figures	xvii
List of Examples	xxi
List of Tables	xxv
Foreword	xxix
Preface	xxxii
Intended Audience	xxxii
Organization of This Book.....	xxxii
Example Code and Shaders	xxxvi
Errata.....	xxxvi
Acknowledgments	xxxvii
About the Authors	xxxix
1. Introduction to OpenGL ES 3.0	1
OpenGL ES 3.0.....	3
Vertex Shader.....	4
Primitive Assembly.....	7
Rasterization	7
Fragment Shader.....	8
Per-Fragment Operations	9
What's New in OpenGL ES 3.0.....	11
Texturing	11
Shaders.....	13

Geometry.....	15
Buffer Objects.....	16
Framebuffer	17
OpenGL ES 3.0 and Backward Compatibility	17
EGL	19
Programming with OpenGL ES 3.0.....	20
Libraries and Include Files.....	20
EGL Command Syntax	20
OpenGL ES Command Syntax	21
Error Handling.....	22
Basic State Management.....	23
Further Reading	25
2. Hello Triangle: An OpenGL ES 3.0 Example.....	27
Code Framework.....	28
Where to Download the Examples.....	28
Hello Triangle Example	29
Using the OpenGL ES 3.0 Framework.....	34
Creating a Simple Vertex and Fragment Shader.....	35
Compiling and Loading the Shaders.....	36
Creating a Program Object and Linking the Shaders.....	38
Setting the Viewport and Clearing the Color Buffer.....	39
Loading the Geometry and Drawing a Primitive	40
Displaying the Back Buffer	41
Summary.....	42
3. An Introduction to EGL.....	43
Communicating with the Windowing System	44
Checking for Errors.....	45
Initializing EGL.....	46
Determining the Available Surface Configurations	46
Querying EGLConfig Attributes	48
Letting EGL Choose the Configuration.....	51
Creating an On-Screen Rendering Area: The EGL Window.....	53
Creating an Off-Screen Rendering Area: EGL Pbuffers.....	56
Creating a Rendering Context.....	60

Making an EGLContext Current	62
Putting All Our EGL Knowledge Together.....	63
Synchronizing Rendering	66
Summary.....	67
4. Shaders and Programs	69
Shaders and Programs.....	69
Creating and Compiling a Shader.....	70
Creating and Linking a Program.....	74
Uniforms and Attributes.....	80
Getting and Setting Uniforms.....	81
Uniform Buffer Objects	87
Getting and Setting Attributes	92
Shader Compiler.....	93
Program Binaries.....	94
Summary.....	95
5. OpenGL ES Shading Language.....	97
OpenGL ES Shading Language Basics.....	98
Shader Version Specification	98
Variables and Variable Types	99
Variable Constructors	100
Vector and Matrix Components.....	101
Constants.....	102
Structures	103
Arrays	104
Operators	104
Functions	106
Built-In Functions.....	107
Control Flow Statements.....	107
Uniforms.....	108
Uniform Blocks.....	109
Vertex and Fragment Shader Inputs/Outputs	111
Interpolation Qualifiers	114
Preprocessor and Directives.....	115
Uniform and Interpolator Packing.....	117

Precision Qualifiers	119
Invariance	121
Summary	123
6. Vertex Attributes, Vertex Arrays, and Buffer Objects.....	125
Specifying Vertex Attribute Data	126
Constant Vertex Attribute	126
Vertex Arrays	126
Declaring Vertex Attribute Variables in a Vertex Shader.....	135
Binding Vertex Attributes to Attribute Variables	
in a Vertex Shader	137
Vertex Buffer Objects	140
Vertex Array Objects	150
Mapping Buffer Objects.....	154
Flushing a Mapped Buffer	158
Copying Buffer Objects	159
Summary	160
7. Primitive Assembly and Rasterization.....	161
Primitives	161
Triangles	162
Lines	163
Point Sprites.....	164
Drawing Primitives	165
Primitive Restart	168
Provoking Vertex	169
Geometry Instancing.....	169
Performance Tips.....	172
Primitive Assembly	174
Coordinate Systems.....	175
Perspective Division	178
Viewport Transformation	178
Rasterization	179
Culling.....	180
Polygon Offset.....	181
Occlusion Queries.....	183
Summary.....	185

8. Vertex Shaders	187
Vertex Shader Overview	188
Vertex Shader Built-In Variables.....	189
Precision Qualifiers.....	192
Number of Uniforms Limitations in a Vertex Shader.....	193
Vertex Shader Examples	196
Matrix Transformations.....	196
Lighting in a Vertex Shader.....	199
Generating Texture Coordinates	205
Vertex Skinning	207
Transform Feedback.....	211
Vertex Textures	214
OpenGL ES 1.1 Vertex Pipeline as an ES 3.0 Vertex Shader.....	215
Summary.....	223
9. Texturing.....	225
Texturing Basics	226
2D Textures.....	226
Cubemap Textures.....	228
3D Textures.....	229
2D Texture Arrays.....	230
Texture Objects and Loading Textures.....	230
Texture Filtering and Mipmapping	237
Automatic Mipmap Generation	242
Texture Coordinate Wrapping.....	243
Texture Swizzles.....	244
Texture Level of Detail	245
Depth Texture Compare (Percentage Closest Filtering).....	245
Texture Formats.....	246
Using Textures in a Shader	255
Example of Using a Cubemap Texture.....	258
Loading 3D Textures and 2D Texture Arrays	260
Compressed Textures.....	262
Texture Subimage Specification.....	266
Copying Texture Data from the Color Buffer.....	269

Sampler Objects	273
Immutable Textures	276
Pixel Unpack Buffer Objects	277
Summary	278
10. Fragment Shaders	279
Fixed-Function Fragment Shaders	280
Fragment Shader Overview	282
Built-In Special Variables	283
Built-In Constants	284
Precision Qualifiers	285
Implementing Fixed-Function Techniques Using Shaders	286
Multitexturing	286
Fog	288
Alpha Test (Using Discard)	291
User Clip Planes	293
Summary	295
11. Fragment Operations	297
Buffers	298
Requesting Additional Buffers	299
Clearing Buffers	299
Using Masks to Control Writing to Framebuffers	301
Fragment Tests and Operations	303
Using the Scissor Test	304
Stencil Buffer Testing	305
Blending	311
Dithering	314
Multisampled Anti-Aliasing	314
Centroid Sampling	316
Reading and Writing Pixels to the Framebuffer	316
Pixel Pack Buffer Objects	320
Multiple Render Targets	320
Summary	324

12. Framebuffer Objects	325
Why Framebuffer Objects?	325
Framebuffer and Renderbuffer Objects	327
Choosing a Renderbuffer Versus a Texture as a Framebuffer Attachment.....	328
Framebuffer Objects Versus EGL Surfaces	329
Creating Framebuffer and Renderbuffer Objects	329
Using Renderbuffer Objects.....	330
Multisample Renderbuffers	333
Renderbuffer Formats	333
Using Framebuffer Objects	335
Attaching a Renderbuffer as a Framebuffer Attachment	337
Attaching a 2D Texture as a Framebuffer Attachment.....	338
Attaching an Image of a 3D Texture as a Framebuffer Attachment	339
Checking for Framebuffer Completeness.....	341
Framebuffer Blits.....	342
Framebuffer Invalidation.....	344
Deleting Framebuffer and Renderbuffer Objects.....	346
Deleting Renderbuffer Objects That Are Used as Framebuffer Attachments.....	347
Reading Pixels and Framebuffer Objects.....	347
Examples.....	348
Performance Tips and Tricks.....	354
Summary.....	355
13. Sync Objects and Fences	357
Flush and Finish	357
Why Use a Sync Object?.....	358
Creating and Deleting a Sync Object	358
Waiting for and Signaling a Sync Object	359
Example	360
Summary.....	361

14. Advanced Programming with OpenGL ES 3.0	363
Per-Fragment Lighting.....	363
Lighting with a Normal Map	364
Lighting Shaders.....	366
Lighting Equations	369
Environment Mapping	370
Particle System with Point Sprites.....	374
Particle System Setup.....	374
Particle System Vertex Shader	375
Particle System Fragment Shader	377
Particle System Using Transform Feedback.....	380
Particle System Rendering Algorithm	381
Particle Emission with Transform Feedback	381
Rendering the Particles.....	385
Image Postprocessing.....	387
Render-to-Texture Setup.....	387
Blur Fragment Shader	388
Projective Texturing.....	390
Projective Texturing Basics.....	391
Matrices for Projective Texturing	392
Projective Spotlight Shaders.....	394
Noise Using a 3D Texture	397
Generating Noise.....	397
Using Noise.....	402
Procedural Texturing	404
A Procedural Texture Example	405
Anti-Aliasing of Procedural Textures.....	407
Further Reading on Procedural Textures	410
Rendering Terrain with Vertex Texture Fetch	410
Generating a Square Terrain Grid	411
Computing Vertex Normal and Fetching Height Value in Vertex Shader.....	412
Further Reading on Large Terrain Rendering.....	413
Shadows Using a Depth Texture.....	414
Rendering from the Light Position Into a Depth Texture	415
Rendering from the Eye Position with the Depth Texture	418
Summary.....	420

15. State Queries	421
OpenGL ES 3.0 Implementation String Queries	421
Querying Implementation-Dependent Limits	423
Querying OpenGL ES State.....	429
Hints	435
Entity Name Queries.....	436
Nonprogrammable Operations Control and Queries	436
Shader and Program State Queries	438
Vertex Attribute Queries	440
Texture State Queries	441
Sampler Queries	442
Asynchronous Object Queries	442
Sync Object Queries.....	443
Vertex Buffer Queries.....	444
Renderbuffer and Framebuffer State Queries	445
Summary.....	446
16. OpenGL ES Platforms.....	447
Building for Microsoft Windows with Visual Studio	447
Building for Ubuntu Linux.....	449
Building for Android 4.3+ NDK (C++).....	450
Prerequisites.....	451
Building the Example Code with Android NDK.....	452
Building for Android 4.3+ SDK (Java).....	452
Building for iOS 7	453
Prerequisites.....	453
Building the Example Code with Xcode 5.....	453
Summary.....	455
A. GL_HALF_FLOAT	457
16-Bit Floating-Point Number	458
Converting a Float to a Half-Float.....	459
B. Built-In Functions	463
Angle and Trigonometry Functions	465
Exponential Functions	466
Common Functions.....	467

Floating-Point Pack and Unpack Functions	471
Geometric Functions	472
Matrix Functions	474
Vector Relational Functions	475
Texture Lookup Functions.....	476
Fragment Processing Functions.....	483
C. ES Framework API.....	485
Framework Core Functions	485
Transformation Functions	490
Index.....	495

List of Figures

Figure 1-1	OpenGL ES 3.0 Graphics Pipeline	4
Figure 1-2	OpenGL ES 3.0 Vertex Shader.....	5
Figure 1-3	OpenGL ES 3.0 Rasterization Stage.....	7
Figure 1-4	OpenGL ES 3.0 Fragment Shader.....	8
Figure 1-5	OpenGL ES 3.0 Per-Fragment Operations	10
Figure 2-1	Hello Triangle Example.....	33
Figure 5-1	Z Fighting Artifacts Due to Not Using Invariance.....	121
Figure 5-2	Z Fighting Avoided Using Invariance	122
Figure 6-1	Triangle with a Constant Color Vertex and Per-Vertex Position Attributes.....	125
Figure 6-2	Position, Normal, and Two Texture Coordinates Stored as an Array	128
Figure 6-3	Selecting Constant or Vertex Array Vertex Attribute	133
Figure 6-4	Specifying and Binding Vertex Attributes for Drawing One or More Primitives.....	138
Figure 7-1	Triangle Primitive Types	162
Figure 7-2	Line Primitive Types	163
Figure 7-3	gl_PointCoord Values	165
Figure 7-4	Cube	167
Figure 7-5	Connecting Triangle Strips	173
Figure 7-6	OpenGL ES Primitive Assembly Stage.....	175
Figure 7-7	Coordinate Systems	175
Figure 7-8	Viewing Volume.....	176
Figure 7-9	OpenGL ES Rasterization Stage.....	179
Figure 7-10	Clockwise and Counterclockwise Triangles.....	180
Figure 7-11	Polygon Offset.....	182

Figure 8-1	OpenGL ES 3.0 Programmable Pipeline	188
Figure 8-2	OpenGL ES 3.0 Vertex Shader.....	189
Figure 8-3	Geometric Factors in Computing Lighting Equation for a Directional Light.....	199
Figure 8-4	Geometric Factors in Computing Lighting Equation for a Spotlight.....	202
Figure 9-1	2D Texture Coordinates.....	227
Figure 9-2	3D Texture Coordinate for Cubemap	228
Figure 9-3	3D Texture.....	229
Figure 9-4	MipMap2D: Nearest Versus Trilinear Filtering	241
Figure 9-5	GL_REPEAT, GL_CLAMP_TO_EDGE, and GL_MIRRORED_REPEAT Modes	243
Figure 10-1	OpenGL ES 3.0 Programmable Pipeline	280
Figure 10-2	OpenGL ES 3.0 Fragment Shader.....	283
Figure 10-3	Multitextured Quad	287
Figure 10-4	Linear Fog on Torus in PVRShaman	289
Figure 10-5	Alpha Test Using Discard	292
Figure 10-6	User Clip Plane Example.....	294
Figure 11-1	The Post-Shader Fragment Pipeline	297
Figure 12-1	Framebuffer Objects, Renderbuffer Objects, and Textures.....	328
Figure 12-2	Render to Color Texture.....	350
Figure 12-3	Render to Depth Texture.....	353
Figure 14-1	Per-Fragment Lighting Example	364
Figure 14-2	Environment Mapping Example	370
Figure 14-3	Particle System Sample	374
Figure 14-4	Particle System with Transform Feedback	380
Figure 14-5	Image Postprocessing Example.....	387
Figure 14-6	Light Bloom Effect	389
Figure 14-7	Light Bloom Stages.....	390
Figure 14-8	Projective Spotlight Example.....	391
Figure 14-9	2D Texture Projected onto Object	392
Figure 14-10	Fog Distorted by 3D Noise Texture	397
Figure 14-11	2D Slice of Gradient Noise.....	402
Figure 14-12	Checkerboard Procedural Texture.....	407

Figure 14-13	Anti-Aliased Checkerboard Procedural Texture.....	409
Figure 14-14	Terrain Rendered with Vertex Texture Fetch	411
Figure 14-15	Shadow Rendering with a Depth Texture and 6 × 6 PCF	414
Figure 16-1	Building Samples with CMake GUI on Windows	448
Figure 16-2	VertexArrayObjects Sample in Xcode Running on iOS 7 Simulator.....	454
Figure A-1	A 16-Bit Floating-Point Number	458

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List of Examples

Example 1-1	A Vertex Shader Example.....	6
Example 1-2	A Fragment Shader Example.....	9
Example 2-1	Hello_Triangle.c Example	29
Example 3-1	Initializing EGL.....	44
Example 3-2	Specifying EGL Attributes.....	51
Example 3-3	Querying EGL Surface Configurations.....	52
Example 3-4	Creating an EGL Window Surface	55
Example 3-5	Creating an EGL Pixel Buffer	59
Example 3-6	Creating an EGL Context.....	62
Example 3-7	A Complete Routine for Creating an EGL Window	64
Example 3-8	Creating a Window Using the <code>esUtil</code> Library.....	65
Example 4-1	Loading a Shader.....	73
Example 4-2	Create, Attach Shaders to, and Link a Program.....	79
Example 4-3	Querying for Active Uniforms	86
Example 5-1	Sample Vertex Shader	112
Example 5-2	Vertex and Fragment Shaders with Matching Output/Input Declarations	113
Example 6-1	Array of Structures	129
Example 6-2	Structure of Arrays	130
Example 6-3	Using Constant and Vertex Array Attributes.....	133
Example 6-4	Creating and Binding Vertex Buffer Objects	141
Example 6-5	Drawing with and without Vertex Buffer Objects.....	146
Example 6-6	Drawing with a Buffer Object per Attribute	149
Example 6-7	Drawing with a Vertex Array Object.....	152
Example 6-8	Mapping a Buffer Object for Writing.....	157
Example 8-1	Vertex Shader with Matrix Transform for the Position	196

Example 8-2	Directional Light.....	200
Example 8-3	Spotlight.....	203
Example 8-4	Sphere Map Texture Coordinate Generation.....	206
Example 8-5	Cubemap Texture Coordinate Generation	206
Example 8-6	Vertex Skinning Shader with No Check of Whether Matrix Weight = 0.....	208
Example 8-7	Vertex Skinning Shader with Checks of Whether Matrix Weight = 0	210
Example 8-8	Displacement Mapping Vertex Shader	214
Example 8-9	OpenGL ES 1.1 Fixed-Function Vertex Pipeline.....	216
Example 9-1	Generating a Texture Object, Binding It, and Loading Image Data.....	234
Example 9-2	Loading a 2D Mipmap Chain	238
Example 9-3	Vertex and Fragment Shaders for Performing 2D Texturing	255
Example 9-4	Loading a Cubemap Texture.....	258
Example 9-5	Vertex and Fragment Shader Pair for Cubemap Texturing	259
Example 10-1	Multitexture Fragment Shader.....	287
Example 10-2	Vertex Shader for Computing Distance to Eye.....	289
Example 10-3	Fragment Shader for Rendering Linear Fog.....	290
Example 10-4	Fragment Shader for Alpha Test Using Discard	292
Example 10-5	User Clip Plane Vertex Shader	294
Example 10-6	User Clip Plane Fragment Shader	295
Example 11-1	Setting up Multiple Render Targets	322
Example 11-2	Fragment Shader with Multiple Render Targets	324
Example 12-1	Copying Pixels Using Framebuffer Blits	343
Example 12-2	Render to Texture.....	348
Example 12-3	Render to Depth Texture.....	351
Example 13-1	Inserting a Fence Command and Waiting for Its Result in Transform Feedback Example	361
Example 14-1	Per-Fragment Lighting Vertex Shader.....	366
Example 14-2	Per-Fragment Lighting Fragment Shader.....	367
Example 14-3	Environment Mapping Vertex Shader	371
Example 14-4	Environment Mapping Fragment Shader	372
Example 14-5	Particle System Vertex Shader.....	375

Example 14-6	Update Function for Particle System Sample	376
Example 14-7	Particle System Fragment Shader.....	377
Example 14-8	Draw Function for Particle System Sample.....	378
Example 14-9	Particle Emission Vertex Shader.....	382
Example 14-10	Emit Particles with Transform Feedback.....	384
Example 14-11	Particle Rendering Vertex Shader.....	386
Example 14-12	Blur Fragment Shader	388
Example 14-13	Projective Texturing Vertex Shader.....	394
Example 14-14	Projective Texturing Fragment Shader.....	396
Example 14-15	Generating Gradient Vectors	398
Example 14-16	3D Noise.....	400
Example 14-17	Noise-Distorted Fog Fragment Shader	402
Example 14-18	Checker Vertex Shader.....	405
Example 14-19	Checker Fragment Shader with Conditional Checks	406
Example 14-20	Checker Fragment Shader without Conditional Checks	406
Example 14-21	Anti-Aliased Checker Fragment Shader	407
Example 14-22	Terrain Rendering Flat Grid Generation.....	411
Example 14-23	Terrain Rendering Vertex Shader	412
Example 14-24	Set up a MVP Matrix from the Light Position	415
Example 14-25	Create a Depth Texture and Attach It to a Framebuffer Object.....	416
Example 14-26	Rendering to Depth Texture Shaders	417
Example 14-27	Rendering from the Eye Position Shaders	418

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