

An Interactive Introduction to OpenGL Programming

SIGGRAPH 2000 – Course 17

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ABSTRACT

This course provides an introduction to writing interactive computer graphics applications using the OpenGL API. In addition to presenting the calls of the OpenGL library in the context of generating particular graphics affects, like lighting or texture mapping, the course uses extensive use of tutorial programs which allow students to manipulate the parameters of function calls and immediately see the rendering affects.

The course assumes no previous experience with OpenGL, merely the ability to read simple “C” programs. Topics range from an overview of the OpenGL libraries, rendering of simple geometric primitives and geometric transformations to advanced features of OpenGL including lighting, texture mapping, anti-aliasing and image processing.

Course Syllabus

8:30 AM	Dave Shreiner	Welcome & Course Introduction
8:45 AM	Vicki Shreiner	OpenGL Introduction and GLUT Overview
9:30 AM	Vicki Shreiner	Elementary Rendering
10:00 AM	<i>Break</i>	
10:15 AM	Vicki Shreiner	Elementary Rendering (continued)
10:30 AM	Ed Angel	Viewing and Modeling Transformations
11:30 AM	Vicki Shreiner	Depth Buffering and Animation
12:00 PM	<i>Lunch</i>	
1:30 PM	Dave Shreiner	Lighting
2:30 PM	Vicki Shreiner	Rendering Images
2:45 PM	Ed Angel	Texture Mapping
3:00 PM	<i>Break</i>	
3:15 PM	Ed Angel	Texture Mapping (continued)
4:00 PM	Dave Shreiner	Advanced OpenGL Topics
5:15 PM	All	Summary, Q & A

Speaker Biographies

Dave Shreiner

Member of the Technical Staff
SGI

Dave is a member of the OpenGL development team at Silicon Graphics Computer Systems. He has over 12 years of experience with visual simulation and scientific visualization, including over nine years at SGI. He has presented several lectures and courses on OpenGL at various conferences, including SIGGRAPH. He is co-author of the *OpenGL Programming Guide* (Addison-Wesley, 3rd edition, 1999) and editor of the *OpenGL Reference Guide* (Addison-Wesley, 3rd edition, 2000). Dave has a Bachelors degree in Mathematics from the University of Delaware, and is an Adjunct Professor of Computer Science at Santa Clara University.

Edward Angel

Professor of Computer Science and Electrical Engineering
University of New Mexico

Ed is Professor in the departments of Computer Science, and Computer and Electrical Engineering at the University of New Mexico. He has over 25 years of experience in research and teaching in computer graphics and image processing. He is the author of the recent textbook: *Interactive Computer Graphics: A Top-Down Approach using OpenGL* (Second Edition, Addison Wesley, 2000). He has taught over 100 professional short courses worldwide, including at SIGGRAPH.

Vicki Shreiner

Member of the Technical Staff
SGI

Vicki is a member of SGI's technical education department. She has over 15 years experience in presenting technical topics at both Hewlett-Packard and SGI, including teaching SGI's OpenGL courses. Vicki has a Bachelor's degree in Computer Science and Mathematics from Lebanon Valley College.

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