



Advanced Papervision3D

with Carlos Ulloa

Course Overview

This is a 3 day intensive in-depth **Advanced Papervision3D Training Course** for experienced professionals who want to be able to create advanced interactive 3D experiences.

The course will focus on the techniques, workflow and planning necessary to overcome the creative and technical challenges of real time 3D in Flash.

You will learn a wide range of innovative tips and skills as well as how to make sound decisions from the beginning to save unnecessary challenges further down the pipeline.

Dive deep into the third dimension with the creator of Papervision3D and discover the secrets behind award winning interactive 3D experiences.

Dates

6 - 8 April 2009

Location

London, UK

Duration

21 hours

Number of participants

Spaces are limited to 20

Prerequisites

This course is geared towards developers who have significant development experience with ActionScript 3 and working knowledge of Papervision3D.

Since this is an advanced course, it's not suitable for people who have limited experience using the above technologies.

PC Requirements

Each participant should come with his/her own notebook with an ActionScript developer environment capable of compiling PV3D projects.

Price

Early Bird

Until February 9th
£595.00

Regular

From February 10th
£995.00

Morning tea and coffee, lunch and drinks will be provided to all participants.

VAT has been added at a rate of 15% in all circumstances. A separate VAT receipt can be issued on request. All prices in GBP.

More Information and Sign Up

<http://papervision3d.eventbrite.com>

Corporate Training

This course is also available as an in-house workshop. Please **contact us** for more details.

Instructor

Carlos Ulloa has been passionately involved with interactive entertainment since the early 90s, both developing and leading PC & PlayStation titles for Psygnosis and Sony Computer Entertainment Europe.

In 1999 Carlos moved into Flash development working in design and advertising agencies in Madrid, Barcelona and London. Since then, his work has evolved into the fields of graphic and typographic effects, motion design, interactivity and mainly 3D.

Carlos is a regular presenter at industry conferences and events and is an active member of the Flash OS community. He is the founder and creator of the Open Source project Papervision3D, and works as Creative / Technical Director at his own studio in London, **HelloEnjoy™**.

Organized by **carlosulloa.com**.



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Course Outline

Course topics may be modified by the instructor based upon the knowledge and skill level of the course participants.
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Day 1

Planning

Concept

Advantages
Disadvantages
Risks
Performance
Quality

Research

Objectives
Strategy
Proof of Concept

Development

Resources
Workflow
Prototype

Production

Content Review
Scheduling
Testing

Optimization

How 3D Works

Initialization
Projection
Render

How PV3D Works

Sprites
Triangles
Bitmaps

Performance

Polygon Count
Polygon Size
Texture Size
Texture Update

Frame Rate

Frame Time
Real Time
Variable Frame Rate
Best Frame Rate

Stage Quality

Bitmap Quality
Vector Quality
Quality Management

Scenes

How Scenes Work

Stage Graph
Scene Graph
Frustum

Depth Sorting

Painter's Algorithm
Sort Modes
QuadTree

Viewport Layers

Layer Graph
Layer Sorting
Layer Effects
Textures vs Layers

Common Issues

Object Sorting
Triangle Sorting

Day 2

Objects

How Objects Work

Object Graph
Geometry
Vertices
Faces

Matrices

Transformation Matrix
World Matrix
View Matrix
Matrix Math
Working With Matrices

Animation

Tweening
Forward Kinematics
Morphing

Working with Models

COLLADA Workflow
Mesh Cleanup
Mesh Optimization
Mesh Sorting

Common Issues

Triangle Sorting

Create Your Own Objects

Materials

How Materials Work

Materials
Shaders
Comparison Chart

Texture Coordinates

Texture Mapping
Texture Projection
UV Transform
UV Animation

Real Time Materials

Update per Object
Update per Face
Light Shading

Working with Textures

Texture Shading
Texture Baking

Common Issues

Pixelation
Perspective Distortion

Create Your Own Materials

Day 3

Cameras

How Cameras Work

Field Of View (FOV)
Near Plane
Far Plane
Focus
Zoom

Simple Animation

Camera Position
Target Position
Camera Settings

Advanced Animation

lookAt
Quaternion Slerps

Simple Interactivity

Mouse Look
Smooth Input
Input Weight

Advanced Interactivity

Navigation
Studio
First Person
Third Person
Following a Path
Arcade vs Simulation

Common Issues

Depth
Distortion
Near Plane Clipping
Overlapping

Create Your Own Cameras

Physics

Real Time Physics

2D
3D
Soft Body
Rigid Body

Box2D

World
Body
Shape
Joints

Prototyping

Phun
WCK

Physics and 3D

Single Reference
Dual Reference

Advanced Techniques

Scale
Dragging Objects
Timestep
Sound