

Workshop: Integrating Web 3D into 3D Animation Curricula

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Abstract

3D curriculum, once focused on modeling, rendering and animation, now includes web 3D and interactivity. But what options exist for new courses in web 3D? How in-depth are some web 3D tools and their learning curves? Should the curriculum expand to make 3D artists into programmers? What considerations should we give to the end-users' experience in viewing an online web 3D portfolio? This session examines how these issues are being addressed in teaching "Interactive Web 3D Media" at UC Berkeley, UC Irvine and UCLA Digital Arts and Entertainment Studies Extension. The session also provides hands-on experience with various tools and technologies.

1 Web 3D Technologies and Solutions Overview

There are some 40 web 3D technologies. Most import 3D models, add some interactivity via drag-and-drop interfaces or have full-fledged application programming interfaces (API's). But unlike Flash for 2D, there is no dominate web 3D tool. Each must be evaluated on its ease-of-use, adoption in the marketplace, costs, and end-user experience.

While teaching web 3D, the goals set for our courses were:

- Enable students to create and upload web 3D in their first class to help inspire and motivate them.
- Post web 3D content on a student's home page to demonstrate and showcase its use in web design.
- Integrate with existing 3D modeling programs such as 3D Studio Max, thus building on a student's skills or as an introduction to 3D.
- Consider end-user experiences in downloading plug-ins and performance in low-bandwidth.
- Minimize development tool and licensing costs.
- Teach programming as an advanced topic, preferring open, multi-purpose languages like JavaScript.

2 Solutions Fit for the Market Place

While also teaching "3D Graphics Programming" within Engineering Departments, we developed software tools for our art courses, allowing 3D artists to open and close doors; stop, start and reverse animations; and navigate freely or to specific camera positions. This tool, "Dynamic-3D", available for free, uses a Java-based, no plug-in, 3D engine. Students create their interactive web 3D within their 3D modeling program simply by appending keywords to the names of their 3D objects, exporting the 3D scene and coupling it with Dynamic-3D. Students can also rotate their 3D objects; turn lights on and off; and modify object colors. The applications for Web 3D include e-commerce, virtual worlds, web site design and product demonstrations.

This workshop will demonstrate how to develop interactive web 3D using Dynamic-3D without requiring students to learn any programming, nor download any plug-ins to create their portfolios. Attendees to this workshop will be shown how to go from exporting content from 3D Studio Max to creating various interactive web 3D applications.

3 Conclusions

Interactive Web 3D combines 3D modeling with software. Its creation relies on development tools of varying ease-of-use, costs and market acceptance. Yet Web 3D expands a student's skill set to future opportunities. Quickly creating and publishing an interactive 3D online portfolio motivates students to learn more and allows instructors to focus on scene optimization, design, performance, greater interactivity through programming and the end-user experience for web 3D.