Cyber-theatres: A Futuristic 'View'

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1. Introduction

The last few years, the development of sophisticated modeling and realistic rendering techniques combined with the emergence of the World Wide Web (Internet) led to the development of a virtual reality environment. This environment allows users from all over the world to access information on any subject, at anytime about anything. Initially, information was provided in the form of two-dimensional multi-media layouts also referred to as "web pages". Recently, through the development of faster networks and more capable client machines "home pages" can be extended into the third dimension. This technology is referred to as Virtual Reality Modeling Language (VRML). It is a modeling language which allows one to describe 3D objects and create dynamic, interactive, virtual worlds on the internet that incorporate animation, motion physics, and real-time, multi-user participation.

The effects of such technology will become apparent especially in the visual-based businesses: product design, advertising, motion pictures, electronic games, architecture and urban planning, etc.

Many systems have been developed that strive to offer more and more fulfilling experiences of interaction. A move into a three-dimensional cyberspace, may soon become an inherent part of cyberspace users. It will move the user beyond the currently two-dimensional appearance of the web into a navigable three-dimensional world.

Not so long ago the first silent black and white motion picture was produced. It revolutionized the way people perceived and visualized images. It also brought with it promises, hopes, and visions of what the future might hold. The World Wide Web may be the next to allow millions to view images as static, animated, and interactive entities. So what is next? Are we satisfied by sitting and experiencing cinema through two dimensional WebPages that limits the experience or would it be desirable to perceive cinema the way it should be: as an interactive, spatial and immersive experience.

This paper focuses on the development of a cyber-theatre, that is, a system that allows one to listen to audio tracks, watch previews or movies, download posters, and visit their movie web sites as a three dimensional spatial experience. The system is a mix of VRML, HTML, Java and JavaScript that allows one to navigate in real time through a world of images, sounds, touch sensors, and links. It is also design to handle eventually multi user interaction. An HTML interface on the side accompanies the 3d world providing an alternative and more familiar way to interact.

2. Project: Concept and Design

The project called *moviezone*, is implemented through a framed web page, with an HTML interface on the side that controls the VRML worlds.
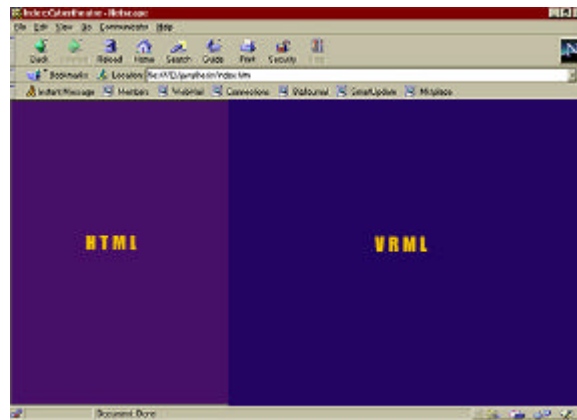
The *moviezone* is an entity in cyberspace. It is designed to be a comprehensive movie site for commercial purposes. It offers movie previews, audio tracks, reviews, posters, and access to movie web-sites all within the parameters of the VRML world.

Different camera views lead you to the hot spots within the *moviezone*, or one can simply navigate through them.


CAMERA VIEWS

The design is divided into five zones each dealing with a specific area
- Movie Previews
- Audio Tracks
- Web Sites
- Reviews
- Movie Posters

The zones are portrayed through a simple room with various items in the room being metaphors for the above (e.g. a video screen would show previews, and a bookshelf with books would lead to the movie web sites). The hotspots are identified through the lighting and levels of detail. So if one was to walk closer in the direction of the video screen, the texture mapping on it would change to shows which movies could be previewed.

Clicking on the movie of your choice displayed on the screen takes one into another world, where the movie may be viewed on the same screen. Like-wise when you click on a CD, it leads to a world, which starts to play a sound file when it loads. Web Sites, Reviews and Posters are all controlled through anchors. An anchor in VRML is synonymous with a hyperlink in HTML, and leads to another web page or VRML world. Since clicking on an anchor and opening up a two dimensional page in the VRML window, loses the sense of three-dimensional space, the anchors are designed to target the left frame and leave the VRML window the way it is.
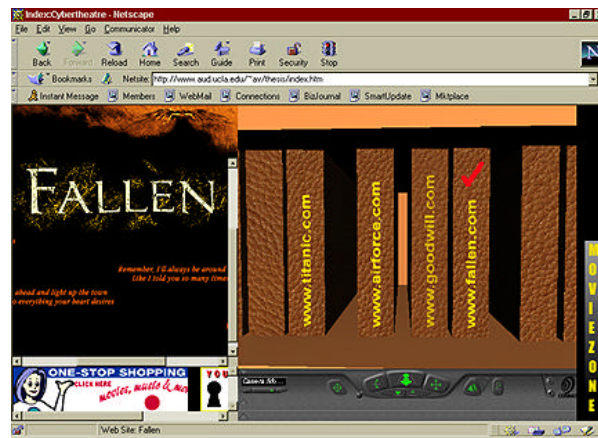
The left frame is devised to act a user-friendly interface between the standard HTML and the three dimensional VRML world. The interactivity between the two is achieved through JavaScript. JavaScript is a scripting language. By integrating JavaScript into HTML pages, one can make the elements respond to user actions. JavaScript takes the information form The Java Class file and targets the nodes within the VRML window. Additionally, JavaScript is also able to control and share information with Java Applets.

The left HTML frame is designed to target all the cameras within the VRML worlds, and allow the user to navigate easily within. It also brings out all the preferences within the VRML browser, like speed control, collision detection, and headlight and light control. In addition it lets you change the background and hence the ambience of the room to give the effect of daylight, dusk, night or simply space.

The project explores the potential of harnessing the three dimensional interactive face of the web into a commercial sector, enhancing and enriching the entire experience and design. It also serves as a crossover to initiate people, who are unfamiliar with three dimensional navigable worlds through the user-friendly HTML interface.

The project however is conceived assuming that soon streaming audio and video would be supported by VRML, which would greatly reduce download time and make this a satisfactory and enjoyable experience. Right now for a modem user, the download time of the movie previews in *avi* formats would take a considerable amount of time and patience. Streaming audio and video would speed up this process. Also with the new release of VRML, multi-user interaction within the world and the chance of sharing a space with others would make it a much more rewarding experience.