

Visualizing guided tours with W3D

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NOTEWORTHY POINTS ABOUT THE DEMO

This text describes the demo of the Webwise3D (W3D) prototype, a 3D environment for guided tours.

When dealing with the hypermedia systems of today the classical hypertext problems concerning disorientation and cognitive overhead, described by Conklin[2] in the 80's are still a problem. Hypermedia systems are intended to deal with large and complex information structures, but often they confuse the user and navigating becomes difficult. Our main concern in working with the prototype was the visual solutions to the navigation problems. The solution presented in the W3D prototype provides a 3D metro map with content preview of each node and an integrated navigation system. The navigation system is part of the 3D model and thus gives the user a feeling of immersiveness.

W3D is implemented as a CGI based server and a web based client which runs in the user's Web browser. Any Web browser which supports a VRML2 plug-in can be used. The W3D server translates guided tours in the OHIF file format to a VRML2 specification which can be viewed in the client.

SYSTEM

In the development of the prototype the Open Hypermedia Interchange Format (OHIF) was used as a basis for the guided tours. OHIF is a XML based data format derived from the OHSWG navigational data model which is a standard data model for open hypermedia structures[4]. A guided tour is represented as a composite node in the OHIF file and contains the nodes in the tour and a directed graph that connects the nodes. Furthermore the guided tour part of OHIF supports document titles, annotations and URLs to the actual documents. The OHIF format is used in other guided tour systems such as Webwise[3] and Arakne[1]. During the development of the W3D prototype the Webwise client was used as a tour editor and our prototype implements full support for the Webwise guided tours.

The W3D server is implemented in Python and consists of a CGI interface and a compiler back end. The typical use of the prototype is to start the client and enter an URL to a OHIF file on a Web server. The URL is submitted in a form to the W3D

server. The W3D server fetches the OHIF document from the specified URL and parses the document in to a DOM tree. The data in the DOM tree are translated into a Python object model for further computation and finally the VRML source code is emitted and send back to the user's Web browser. The translation from the XML based OHIF format to VRML is done solely by the compiler on the server.

The W3D client provides an interface to help the user navigating the 3D spatial environment. The guided tours are modeled as 3D metro maps with content preview. This representation is very similar to the 2D representation in Webwise but contrary to Webwise the metro map is automatically scaled according to the window size which eliminates panning. The use of thumbnail images makes it easy to recognize individual nodes or sub parts of the tour when rotating the model. At the same time the thumbnails minimize the cognitive overhead related to following a link by giving the user a preview of the link destination. Furthermore the tours have a built-in navigation system which allows the user to jump between different views in the model and to follow a predefined tour. The navigation system is tailored to each tour and prevents the user from getting lost in hyperspace.

DEMO APPROACH

W3D demonstrates our visual solution to the problems related to disorientation and navigation in guided tour systems. The demo will concentrate on the representation of guided tours in a 3D environment, the representation of nodes and links and the navigation in the environment.

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