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3DWiki: The 3D Wiki Engine
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ABSTRACT
We demonstrate one of the potential paths of the evolution of wiki engines towards Web 3.0. We introduce 3DWiki - the 3D wiki engine, which was built according to 2-Layer Interface Paradigm (2LIP). It was developed for use by Copernicus, our vision of a 3D encyclopedia. In the demonstration:
- We give an overview of 2-Layer Interface Paradigm, an attempt to marry advantages of 3D experience with the advantages of narrative structure of hypertext.
- We describe step by step how to create an article for Copernicus: from creating models for the 3D background, through authoring the content, creating the c-links, to publishing the result in our encyclopedia.
- We show how to use a physics engine in our wiki.

Categories and Subject Descriptors

Keywords
2LIP, 3D Hypermedia, 3D Web, 3D Wiki

1. 2-LAYER INTERFACE PARADIGM
In 1992, during the Conference on Hypertext and Hypermedia, Jay D. Bolter gave a keynote speech on Virtual Reality and the Future of Hypertext [2], where he described how the two can be combined into “a hypertextualized virtual space”. 2LIP is an attempt to create such space – the new generation of text [7].

2LIP assumes that building graphical user interfaces involves the integration of two layers: (1) the background layer is a 3D scene; (2) the foreground layer, above the 3D view is presented semi-transparently hypertextual content, together with graphics and multimedia (e.g., videos or other interactive 3D). Hyperlinks are used for navigation in the 3D scenes (in both layers) – it is possible to “browse” the scenes following predefined paths (camera moves) invoked from the foreground hypertext layer.

2LIP builds upon several well established techniques: Constraint 3D Navigation [5] (it constrains the audience’s movement to interesting places – avoids the classic problem of users getting ‘lost-in-cyberspace’), Transparency (like Harrison and colleagues [6], we found that it can improve workspace visibility without harming interaction performance), the Focus + Context infoviz technique [3], Animation (like in [1], we found that animation improves users’ ability to reconstruct the information space).

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3. REFERENCES
Figure 1. The idea behind 2LIP.

Figure 2. Welcome pages of Wikipedia and Copernicus.

Figure 3. (a) The article. (b) The free navigation mode.

Figure 4. The 3D Editor.

Figure 5.

**Left:** Authoring interfaces in Copernicus: (a) the text, (b) the 3D edit tab;

**Left:** Evaluation Results.

**Above:** Article about Mustang Fighter and the first article, where we used a physics engine (Bullet). We found this solution very helpful, especially for visualizations of physical laws (like in this example).